Operation Manual

UNIclean B 15

40025001

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Imprint

Manufacturer	Maschinenfabrik Rieter AG Klosterstrasse 20 CH-8406 Winterthur Switzerland
Customer service telephone	+41 52 208 71 71
Customer service email	aftersales@rieter.com
Website	www.rieter.com
Material number	11058881

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1 Introduction

This chapter contains the basic information about this manual. This chapter contains the information about the used conventions and the CE-certificate for the machine.

1.1 About This Manual

The manual is a part of the machine and is to be kept at the machine. The instructions from the third-party suppliers are also to be kept at the machine.

1.2 Used Conventions

The writing conventions that are used in this manual are as follows:

Writing Convention		
Name	**Example**	**Description**
Section information	Chapter 1, 1.1, 1.1.1	The chapter numbers are given in a sequence. The chapter number starts with the number 1.
Figure number	*Figure 1*	The figure numbers are given in a sequence. The figure number starts with the number 1.
Callout	1	The elements in the figure are identified with position numbers.

1.3 Intended User

Only Rieter-approved personnel are permitted to operate the machine and to do the maintenance work and the repair work at the machine. The personnel must know the content of this manual and how to find the related information.

More information about the intended user is given in chapter 2 of this manual.

1.4 Identification of the Operation Manual

The operating manual can be uniquely identified via the material number and the editorial version. The identification characteristics are specified in the legal notice.

1.5 Instruction of Personnel

Safety Advice for Any Person in the Vicinity of the Machine

Safety devices

General notes on safety ▸ *22*

UNIclean ▸ *31*

Operation Guidelines for Any Person Involved with the Machine

Safety devices

Testing the function of the EMERGENCY STOP button ▸ *114*

Testing the function of the main switch ▸ *114*

Opening doors when power is available (door lock) ▸ *116*

Manually opening the doors in de-energised status ▸ *115*

Opening the flap on the lock roller ▸ *114*

Setting Up, Changing Over, Adjusting

Adjusting

Cylinder ▸ *70*

Cylinder ▸ *70*

Grid ▸ *71*

Cylinder ▸ *71*

Measurements ▸ *108*

Waste extraction ▸ *128*

Explanation on How to Handle the Electronic Documentation (e-DOC)

Navigating through the e-DOC program

Navigating through the e-DOC (electronic documentation) program ▸ *116*

Opening e-DOC ▸ *117*

Selecting the language and accepting the licence agreement ▸ *117*

Opening the home page ▸ *118*

Opening the "Settings" menu and entering data ▸ *118*

Entering ordering address ▸ *119*

Entering recipient's address ▸ *119*

Opening the e-DOC overview screen ▸ *120*

Opening the spare parts catalogue ▸ *120*

Navigating through the spare parts catalogue ▸ *121*

Navigating through lower-level sub-assemblies in the spare parts catalogue ▸ *121*

Selecting spare parts for sub-assemblies ▸ *122*

Filling in the order form ▸ *122*

Saving the shopping basket information ▸ *123*

Example of an order ▸ *123*

Switching from the spare parts catalogue to the operating manual ▸ *124*

Navigating through the operating manual ▸ *124*

Searching for handling instructions in the operating manual ▸ *125*

Opening the operating manual ▸ *125*

Navigating through the operating manual ▸ *126*

Opening the troubleshooting information page ▸ *126*

Entering the fault code ▸ *126*

Rectifying faults ▸ *127*

Directly opening the order form for spare parts ▸ *127*

"Filling" and "saving" the shopping basket ▸ *127*

Closing the e-DOC program ▸ *128*

1.6 Preface

The information contained in these instructions is intended to assist the smooth, trouble-free running of the machine and the safety of operators and maintenance personnel.

The instructions contain important notes on how to operate the machine safely, properly and efficiently. By observing these instructions you can help prevent danger, reduce repair costs and downtimes, as well as increasing the reliability and lengthening the service life of the machine.

The operating instructions must be permanently available at the place where the machine is located.

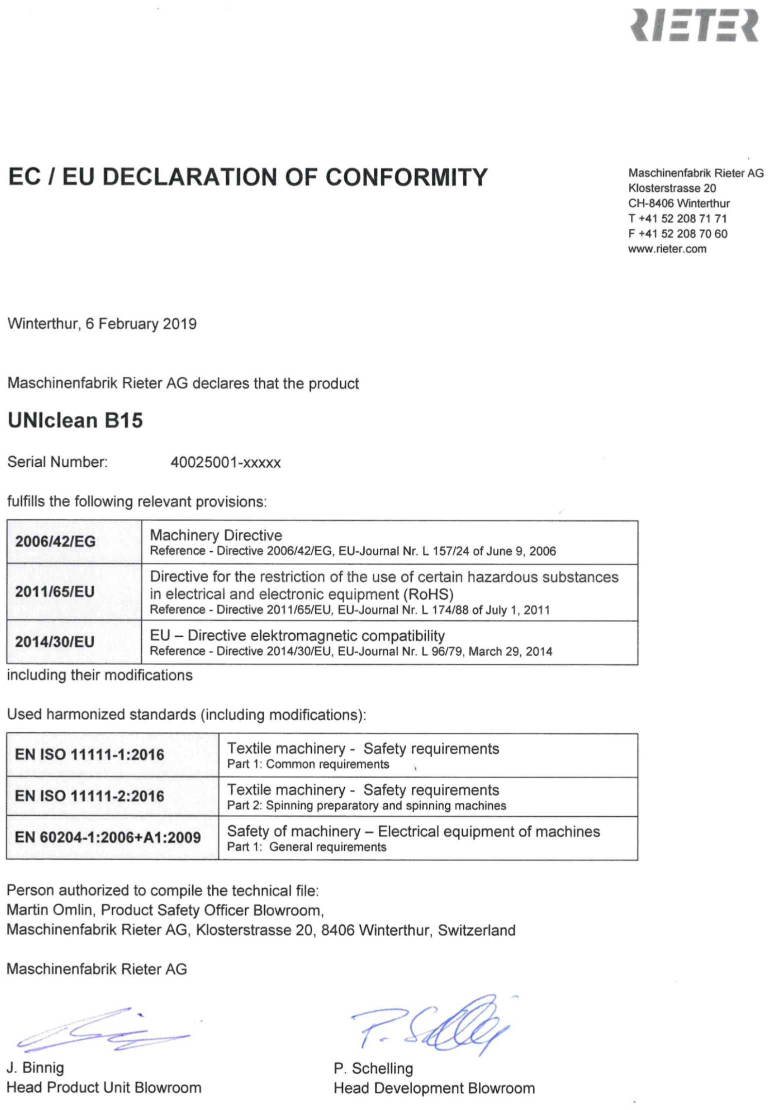
The instructions must be read and followed by everyone who is assigned to work on the machine.

The instructions correspond to the technical state of the art at the time of going to press.Rieter reserves the right to carry out modifications.

Inquiries concerning Service information should be addressed to the Service Centre responsible for your region.

The instructions must be completed as necessary by adding directions based on existing national regulations for the prevention of accidents and the protection of the environment.

1.7 CE-Certificates and Standards



EC / EU DECLARATION OF CONFORMITY

Maschinenfabrik Rieter AG
Klosterstrasse 20
CH-8406 Winterthur
T +41 52 208 71 71
F +41 52 208 70 60
www.rieter.com

Winterthur, 6 February 2019

Maschinenfabrik Rieter AG declares that the product

UNIclean B15

Serial Number: 40025001-xxxxx

fulfills the following relevant provisions:

2006/42/EG	Machinery Directive Reference - Directive 2006/42/EG, EU-Journal Nr. L 157/24 of June 9, 2006
2011/65/EU	Directive for the restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS) Reference - Directive 2011/65/EU, EU-Journal Nr. L 174/88 of July 1, 2011
2014/30/EU	EU – Directive elektromagnetic compatibility Reference - Directive 2014/30/EU, EU-Journal Nr. L 96/79, March 29, 2014

including their modifications

Used harmonized standards (including modifications):

EN ISO 11111-1:2016	Textile machinery - Safety requirements Part 1: Common requirements
EN ISO 11111-2:2016	Textile machinery - Safety requirements Part 2: Spinning preparatory and spinning machines
EN 60204-1:2006+A1:2009	Safety of machinery – Electrical equipment of machines Part 1: General requirements

Person authorized to compile the technical file:
Martin Omlin, Product Safety Officer Blowroom,
Maschinenfabrik Rieter AG, Klosterstrasse 20, 8406 Winterthur, Switzerland

Maschinenfabrik Rieter AG

J. Binnig
Head Product Unit Blowroom

P. Schelling
Head Development Blowroom

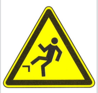
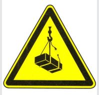
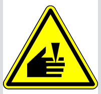
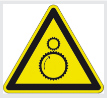
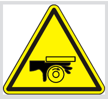
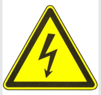
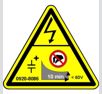
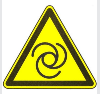
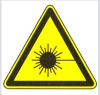
Figure 1: CE-Certificate

1.8 How to Use the Operating Instructions

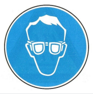
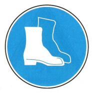
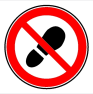
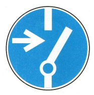
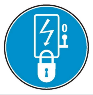
1.8.1 Symbols in the Document

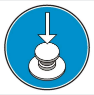
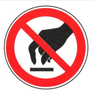
Danger Symbols

⚠	General danger spots

	Danger of falling
	Suspended load
	Risk of injury
	Risk of injury due to part of the body being pulled in
	Risk of injury due to being pulled in
	Dangerous voltage
	Shock from capacitor
	Danger due to automatic start-up
	Laser beam

Prevention Symbols

	Use eye protection
	Wear protective footwear
	No admittance
	Shut down power before working on the installation.
	Turn off main switch and secure with a padlock

	Activating an emergency STOP
	Do not touch

Symbols in the Document

👁	The page indicated refers to the currently selected chapter.
☞	More information on this subject can be found on the page indicated
☹ ☒	Wrong application, not permissible
☺ ☑	Correct application, OK
⟹	Result! For example, after a job sequence unit

1.9 Legal Stipulations

1.9.1 Liability

If, contrary to regulations, the assembly of new or existing plant is carried out by a third party, Rieter Machine Works Ltd. declines all liability.

The auxiliary agents supplied by Rieter such as crane, roll lifter etc.must be used only at the places and on the types of machine intended and for no other purpose .Rieter Machine Works Ltd. declines all responsibility for any damage due to inappropriate usage of the auxiliary agents

If the machine is used for any purpose other than that for which it is intended, Rieter Machine Works Ltd. declines all liability.

2 Safety

This chapter contains the information about the machine safety. This chapter contains the information about the location of the safety labels, the safety equipment, and the danger zones in the machine and around the machine. This chapter contains information about the intended user.

2.1 Introduction

This chapter contains information about the machine safety and the machine safety symbols. To know and to obey, all the safety instructions are necessary for the personnel that operate, keep, and repair the machine.

2.2 General Safety Information

This machine has a state-of-the-art technology and supplies a high standard of operational reliability.

The standards and directives applied during design, production, and configuration are listed in the EC/EU Declaration of Conformity and the manufacturer's declaration. Obey the national safety regulations applicable in the country where the machinery is operated, as well as the mill safety regulations and the accident prevention regulations!

2.3 Safety Messages

The safety messages contain a signal word, a safety symbol, and the safety instructions.

⚠ **DANGER**

If the safety instructions are NOT obeyed, the situation causes death or irreversible injuries.

⚠ **WARNING**

If the safety instructions are NOT obeyed, the situation can cause death or injuries.

⚠ **CAUTION**

If the safety instructions are NOT obeyed, the situation can cause small injuries.

Structure of the Safety Messages

Each safety message contains the elements that follow:

- Safety symbol
- Signal word
- Type and source of the danger
- Consequences of the danger if not prevented
- Instructions to prevent the danger

2.4 Product Safety

This chapter contains the information about the product safety.

2.4.1 User Qualification and Hierarchy

This chapter contains the information about the 3 different user levels that are related to the type of the tasks that are done at the machine:

Operators (Level 1)

The operators are approved personnel that do the cleaning tasks and the daily maintenance work at the machine.

- The operators know the machine safety and how to keep the machine safe.
- The operators use the personal protective equipment if the personal protective equipment is necessary.
- The operators do a regular training to operate the machine safely.
- The operators know the operation manual and, specially, the safety chapter of this manual.

Supervisors (Level 2)

The supervisors are approved personnel that do the work at the machine.

- The supervisors are permitted to do the configuration of the specified machine parameters, to do the maintenance work, and to give instructions to the operators.
- The supervisors did the Rieter training courses and got the certificates.

Technicians (Level 3)

The technicians are approved personnel that do the work at the machine. The technicians have expertise that was given by Rieter about the adjustments and the maintenance of the machine.

- The technicians make changes to most of the machine parameters.
- The technicians are permitted to give instructions to the supervisors and the operators.

- The technicians regularly do the Rieter training courses and get the certificates.

2.4.2 Activate the Safety Limit Switch

Transporting and installing the machine ▸ 65

Activate the Safety Limit Switch

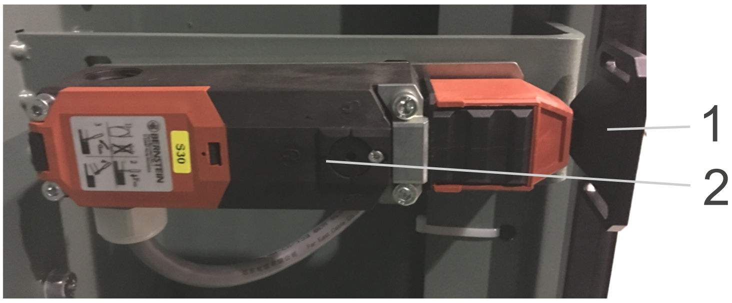


Figure 2: Activate the safety limit switch

The machine is supplied with an unsecured safety limit switch on the left side of the machine.

Secure the safety limit switch during installation so that the machine can be put into operation.

2.5 Property Damage Notice

This signal word NOTICE shows the information about the damage of the machine or close objects. If the NOTICE information is not obeyed, damage to the related property occurs.

NOTICE

This signal word shows that the user must obey the given procedure or message to prevent a property damage.

2.6 Emergency Information

Emergency Stop Button

The emergency stop button is pushed to stop the machine immediately in an emergency.

2.6.1 Personal Injury

If an accident occurs, do the first-aid treatment. Make a call to the local emergency center.

Tell a report of the emergency:

- Who makes the call?
- What occurred?
- When?
- Where?
- How many persons have an injury?
- Do other dangers occur?

2.7 General Notes on Safety

2.7.1 Safety Precautions

Intended Use

This machine is intended solely for the processing of cotton and 100% man-made fibers, along with blends of such materials. See “Raw materials for processing” in the “Technical data” chapter.

Only closed rooms with suitable air-conditioning for spinning technology are to be used for machine operation.

The machine is to be used only as intended. Operate the machine only according to this operating manual.

Any use beyond the intended purpose is regarded as improper use, in particular using materials hazardous to health, such as asbestos, glass, etc.

Technical State

If the machine is operated while in a defective state, safety, proper functioning and availability will be compromised.

- Operate the machine only while it is in a technically fault-free state.
- Comply with the maintenance schedule.
- Use only original spare parts (indicated in the spare parts catalogue).

If the operating behavior of the machine changes, check the machine for faults.

- Remedy the faults immediately.
- Do NOT make unauthorized modifications or changes to the machine.

Availability of the Operation Manual

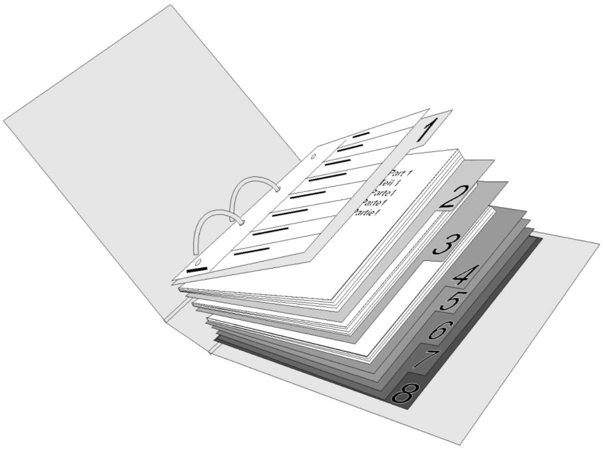


Figure 3: Operating manual

The operating manual must be available to the personnel involved.

Personnel must have read and understood the operating manual, prior to commencing work.

Safety Awareness

For reasons of operability, it is not possible to completely eliminate all sources of danger.

“Overestimation of one’s capabilities” is a major source of danger.

Even routine tasks require full attention at all times.

Qualification of Personnel

Unqualified personnel cannot recognize risks and are therefore exposed to dangers. Only technically qualified personnel are to be assigned tasks at the machine (described in this operating manual).

Installation, operating, maintenance and service personnel must have been trained.

Have the operating authority ensure that personnel comply with the locally applicable rules and regulations for safe and hazard-conscious work.

Have the operating authority specify and make known the responsibilities for tasks. Keys and passwords are to be given to assigned personnel only.

Qualification of different types of personnel:

Maintenance technician: On account of their vocational education and training by the manufacturer of the machine, as well as the job assigned to them, maintenance technicians are in a position to recognize hazards or residual risks that exist during maintenance of the machine, and to take appropriate measures.

Operator: After being trained by the manufacturer or the operating authority, operators are in a position to recognize hazards or residual risks that exist during operation of the machine, in order to guarantee the safe operation of the machine.

Qualified electrician: Maintenance work involving the electrical equipment may only be carried out by qualified electricians (electricians, master electricians, electromechanical technicians, mechatronics technicians, electrical engineering technicians, electrical engineers).

Access to the Machines

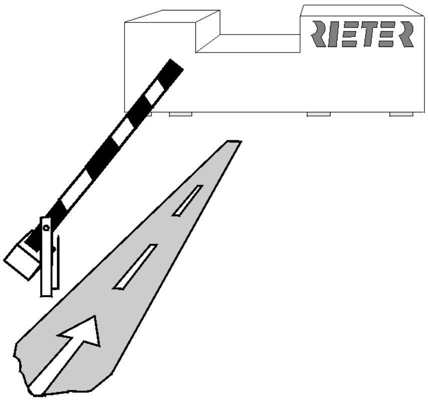


Figure 4: Access to the machines

Only trained and authorized personnel are to have access to the machines.

Personal protective Equipment

Ear protection:

During operation, high levels of airborne noise are emitted at the machine, which can result in hearing damage.

– Use ear protection in accordance with EN 352.

Safety shoes:

At the machine, there is a risk of injury to the feet due to falling objects.

– Wear safety shoes in accordance with EN ISO 20345 (category S3).

Safety gloves for oils and antifreeze agents:

There is a risk of injury to the hands when handling oils and antifreeze agents.

- Wear nitrile safety gloves in accordance with EN 374.

Cut protection gloves:

There is a risk of injury to the hands when handling sharp edged objects.

- Wear cut-resistant gloves with flexible, puncture-proof latex coating in accordance with EN 388:2003.

Thermal-protection gloves:

Surfaces at the machine can become hot.

- Wear thermal-protection gloves in accordance with EN ISO 407.

Safety glasses:

When using compressed air during cleaning tasks, there is a risk of eye injury.

- Wear safety glasses at all times.

When carrying out grinding work for maintenance purposes, there is a risk of eye injury.

- Wear safety glasses at all times.

Clothing

- Use of appropriate clothing minimizes the risk of accident.
- Do NOT wear loose clothing (such as scarves, ties, clothing with wide open sleeves, etc.).
- Cover hair if it is long. Wear a cap or a hairnet at all times.
- Do NOT wear rings or wrist watches.

Protection against inadvertent start-up

If the machine starts up inadvertently, persons working at the machine can be seriously injured as a result.

1. Set the main switch or the safety switch to the “0” position and attach a lock to the switch.
2. Remove the key and keep it on your person.

Protective Devices

The safety of persons will be compromised if protective devices do NOT function effectively. Prior to operating the machine, ensure that all protective devices are functioning effectively. Do NOT remove tightly screwed-on covers, viewing windows and pipes unless the machine is in a safe operating state.

Safe operating state:

The main switch or the safety switch is in the “off” position and secured with a lock. There must be no active machine processes.

Work on electrical Equipment

With the machine at a standstill, set the main switch or the safety switch to the “OFF” position and secure the switch with a lock.

Only electrical technicians are permitted to work at the machine with the main switch in the “ON” position (for measurement and testing purposes).

To guarantee a correct operation sequence, do NOT manually actuate the sensors in normal mode.

External Voltage

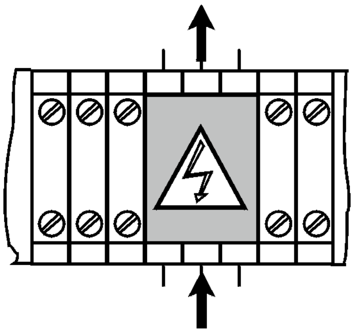


Figure 5: External voltage

Individual circuits may still be live even with the main switch or safety switch in the “OFF” position.

These circuits are marked at the terminals. (see diagram).

Particular care and attention is required in this area.

Supply Line

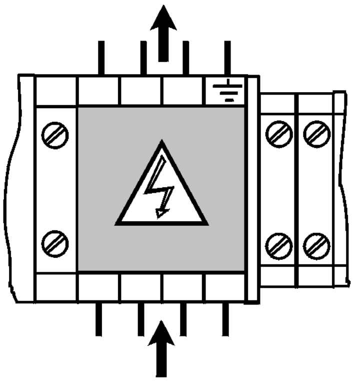


Figure 6: Supply line

The supply line to the main switch remains live, even if the main switch is in the “OFF” position.

The terminals of the supply line are marked. (See diagram).

Particular care and attention is required in this area.

Discharge Duration for Frequency Converters

When carrying out maintenance tasks at frequency converters, comply with the 10-minute wait requirement for discharge.

Safety Circuit

The safety circuit consists of sensors, control elements and actuators. The safety circuit serves to protect man, environment and devices. The elements of the safety circuit are categorized as such in the electrical system documentation.

The following elements are part of the safety circuit:

- EMERGENCY STOP button
- Machine-casing monitors (safety limit switches at doors, hoods, etc.)
- Machine-casing locks (for locking / unlocking of doors, hoods, etc.)
- Safety relay
- Frequency converters with integrated functional safety features
- Controllers with integrated functional safety features

Integrated functional Safety Features of Frequency Converters

STO (Safe Torque Off) - ensures a no-torque state

SOS (Safe Operating Stop) - ensures a safe operational stop

SBC (Safe Brake Control) - ensures safe control of brake

SS1 (Safe Stop 1) - ensures a controlled stop (category 1)

SS2 (Safe Stop 2) - ensures a controlled stop (category 2)

SSM (Safe Speed Monitor) - ensures safe monitoring of speed

SLS (Safe Limited Speed) - ensures safe limited speeds

SDI (Safe Direction) - ensures movement in a “safe” direction

Safe Torque Off (STO) after EN 60204-1

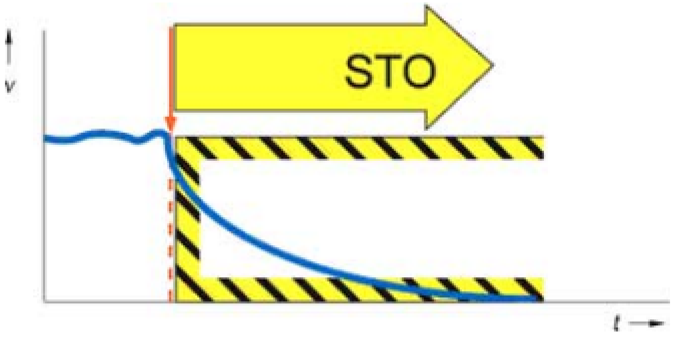


Figure 7: Safe torque off

The function STO ensures, that no torque building energy can work on a machine. This prevents an unexpected start-up of the motor. The controller of the operator monitors this condition.

Safety Instructions for Maintenance

Drives with integrated functional safety have a limited service life.

- Never open elements of the safety circuit.
- Do NOT modify any elements.

Only ever replace defective safety elements with complete work units! For this commission trained specialists.

Safety elements must only be repaired by the manufacturer or by a certified organization (RIETER Repair Station).

To guarantee the effectiveness of the safety features, these measures must always be implemented.

Required Action following Replacement of a Safety Element

1. Execute the function test of the safety circuit.
2. Document the replacement and test run events in the log (SAFETY-CIRCUIT LOG) of the electrical documentation for the relevant machine.

Exclusion of Liability

Any unauthorized opening and tampering of safety elements or devices with safety functions contrary to the operating manual instructions (including e.g. the replacement of electronic boards (PCBs) between frequency converters, the removal of such boards, etc.) can lead to physical injury and/or material damage.

Any unauthorized opening and tampering of safety elements or devices will result in the loss of all warranty claims, the waiving of liability for ensuing consequences and the loss of any claims for compensation of damage.

Any costs incurred for the repair or replacement of such a device as a result of unauthorized opening shall be borne in full by the customer.

Interventions on a safety-relevant device, that is not described in this operating manual, and that are executed by an unauthorized person, have as consequence that the safety functions of the device, and thus of the machine, no longer comply with the statutory regulations. Unauthorized opening, changing or repair is prohibited and can be verified. The manufacturers have all the information on the safety elements, e.g. serial numbers of the converters and also of the integrated elements.

Safe Work Environment

Risk of slipping and tripping:

Slippery surfaces and trip hazards can lead to serious accidents.

- Keep aisles, handles, steps, ladders, platforms and railings free of grease, oil and other soiling.
- Do NOT use the machine as a climbing aid or as a means of support.
- Use only the steps and platforms provided.
- Wear anti-slip safety shoes.

Safety Markings

The safety of persons will be compromised if safety markings are not discernible.

- Replace markings that are not discernible.
- Do NOT remove or cover safety markings.

Aids and Tools

Auxiliary aids such as ladders, lifting devices, etc. must be in perfect condition.

Tools and other auxiliary aids must not be deposited on machines that are running.

When using chemicals, such as solvents, comply with the instructions of the manufacturer.

Max. Weight for manual Handling

A max. weight of 25 kg for regular handling is specified in EN 1005-2.

If the weight of a subassembly exceeds 25 kg, use two persons or lifting equipment for handling purposes.

Work at Buildings and Installations

Bring the machine to a standstill, If, for example, work is to be carried out above the machine, ensure that the machine is stopped beforehand.

Fire Protection

Figure 8: Fire protection

With textile processes, fires can occur.

Fires start through ignition of fibers, fly or fiber dust, when there is smoking, contact of cotton with bearings that are running hot, sparks flying from metallic impurities and electrically generated sparks.

Provide manually-operated extinguishing systems, etc. for fire-fighting purposes.

Instruct personnel in the correct handling of extinguishing systems, use of escape routes, etc.

Determine the extinguishing systems to use in consultation with the local fire-protection authorities.

Disposal

If the machine is to be shut down for good, the legal requirements for re-use and recycling which hold in the respective country are to be complied with.

The operating authority is responsible for the proper disposal of operating media, such as oils, greases and batteries.

2.7.2 Danger Areas

2.7.2.1 UNIclean

Screwed windows, secured doors and screwed pipelines are safety devices. Only remove the safety devices when the machine has come to a complete standstill. Switch off and secure the main switch. Do not remove the padlock until all components have been reinstalled.

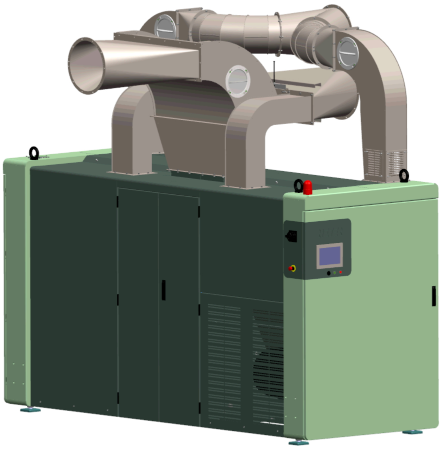


Figure 9: UNIclean

– Definition of machine sides

Definition of machine sides ▸ 33

– Secured flap on the pin roller

Secured flap on the pin roller ▸ 33

– Screwed on window

Screwed on window ▸ 34

– Safety screws

The covers fixed with security nuts ▸ 34

– Cover of the lock roller

Cover of the lock roller ▸ 35

– Safety marking on the flap on the pin roller

Safety marking on the flap on the pin roller ▸ 35

– Secured doors

Secured doors ▸ 36

– Safety limit switches

Secure doors with limit switch ▸ 36

– Door handle

Door handle ▸ *36*

- Door handle

Door handle ▸ *37*

- Safety marking on the pin roller drive

Safety marking on the pin roller drive on the left machine side ▸ *37*

- Safety marking on the pin roller drive

Safety marking on the pin roller drive on the right machine side ▸ *38*

- Safety marking on the lock roller drive

Safety marking on the lock roller drive ▸ *38*

- Screwed on piping

Piping ▸ *39*

- Safety marking on the pin roller drive

Technology opening ▸ *39*

- Safety marking on the electrical voltage

Control cabinet ▸ *40*

- Operating instructions

Safety cover main drive ▸ *40*

- Operating instructions

Safety on the lock roller ▸ *41*

- Safety marking

Safety marking meaning ▸ *41*

- Safety marking

Safety marking meaning ▸ *41*

- Safety marking

Safety marking meaning ▸ *41*

- Safety marking

Safety marking meaning ▸ *42*

- Safety marking

Safety marking meaning ▸ *42*

2.7.2.2 Definition of Machine Sides

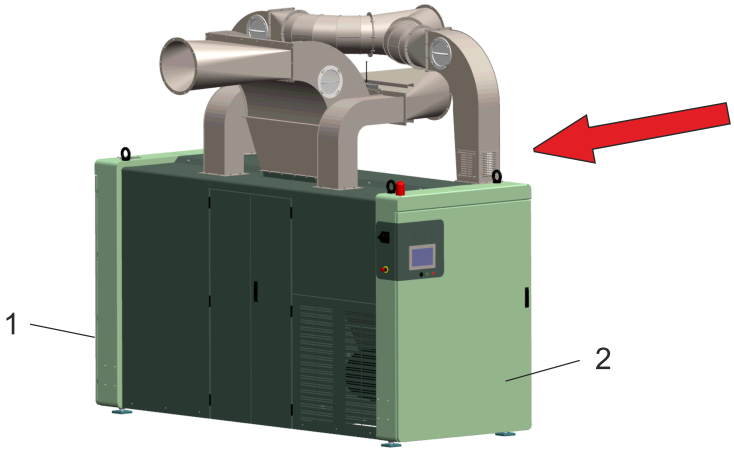


Figure 10: Definition of machine sides

For machines with a material flow in only one direction, the viewing angle is counter to the material flow, right-hand side of the machine **1**, left-hand side of the machine **2**.

2.7.2.3 Secured Flap on the Pin Roller

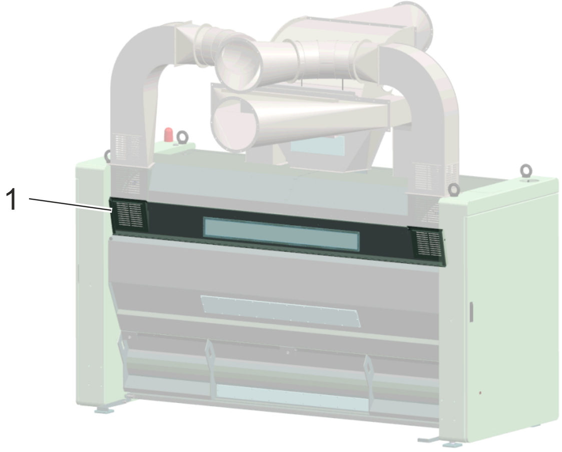


Figure 11: Secured flap on the pin roller

The flap on the pin roller **1** is monitored by a safety switch.

2.7.2.4 Screwed on Window

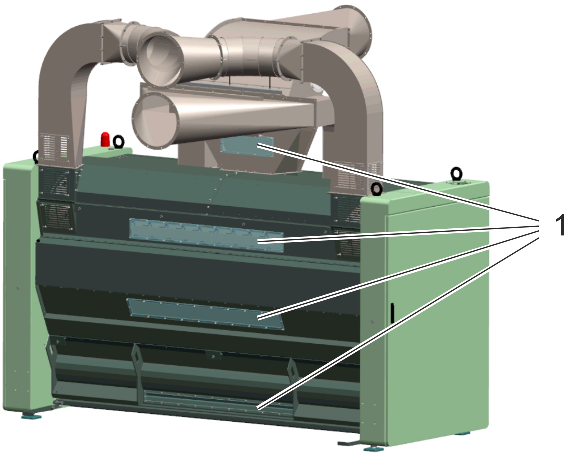


Figure 12: Screwed on window

Screwed on covers and view windows on the front and rear of the machine are safety devices.

The windows 1 are secured with safety screws. The windows cannot be opened with tools.

To replace the windows forcibly remove the nuts. (e.g. using a chisel).

Secure new windows with safety screws.

2.7.2.5 The Covers Fixed with Security Nuts

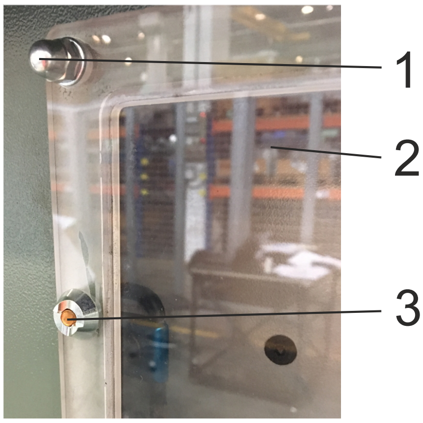


Figure 13: The covers fixed with security nuts

The three transparent covers 2 at the front of the machine are fixed with nuts 1 and security nuts 3.

2.7.2.6 Cover of the Lock Roller

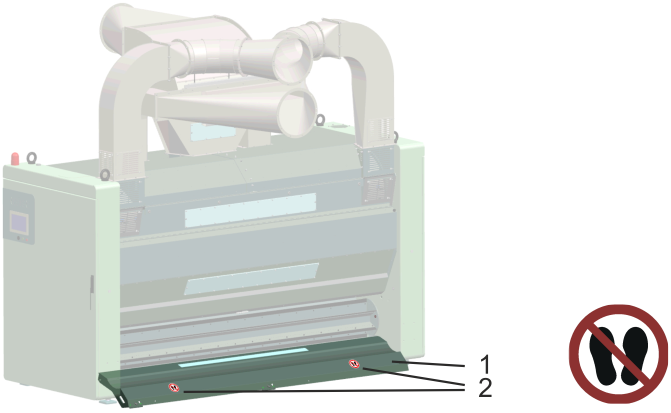


Figure 14: Cover of the lock roller

Do not enter the opened of the lock roller cover 1.

Thus, there are two safety markings No one may enter the area 2 on the inner side of the lock roller cover.

2.7.2.7 Safety Marking on the Flap on the Pin Roller

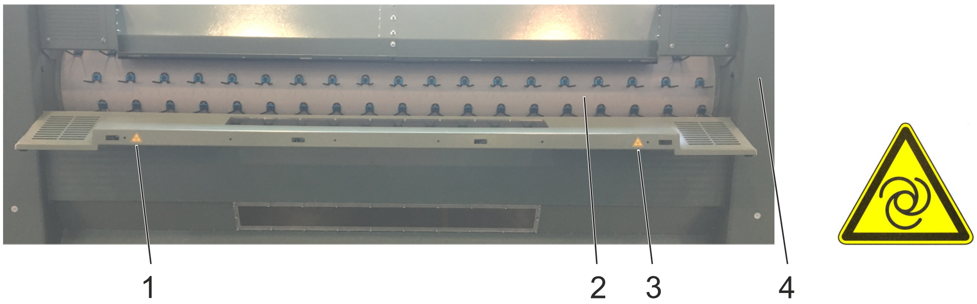


Figure 15: Safety marking on the flap on the pin roller

There are safety markings 1, 3 on the flap on the pin roller 2 on the front side of the machine 4.

2.7.2.8 Secured Doors

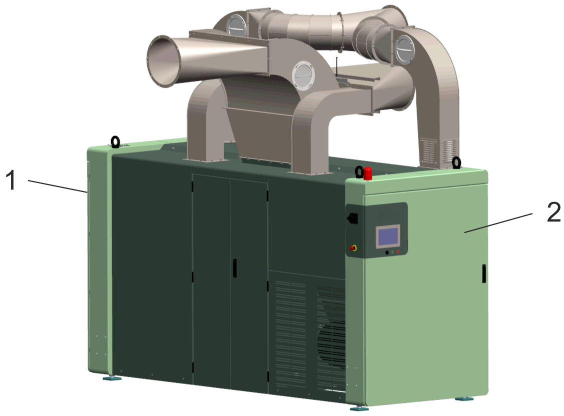


Figure 16: Secured doors

The doors 1, 2 are secured with safety switches equipped with guard locking. The doors cannot be opened when operating the machine. The doors can only be opened when the pin roller has come to a standstill.

2.7.2.9 Secure Doors with Limit Switch

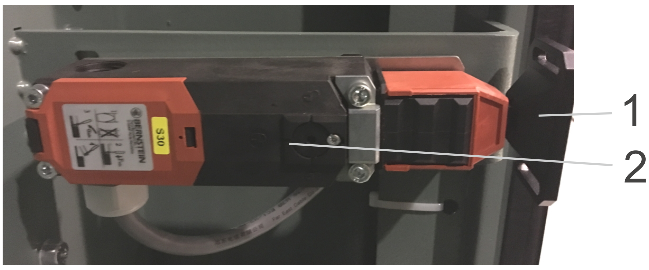


Figure 17: Secure doors with limit switch

The doors are secured by a safety limit switch. The safety limit switch consists of a component which is screwed onto the door 1 and a component which is screwed into the housing 2 of the machine. The safety limit switch is connected to the software for the safety check.

2.7.2.10 Door Handle

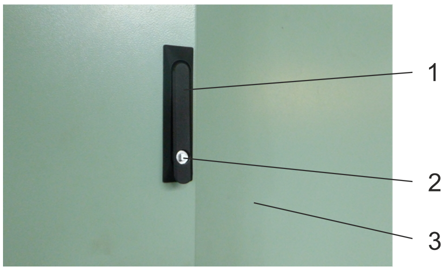


Figure 18: Door handle

The doors are secured with door handles.

2.7.2.11 Door Handle

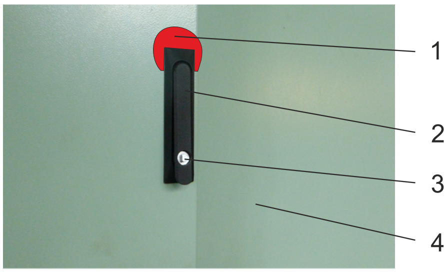


Figure 19: Door handle

The doors are secured with door handles with safety function. The door looking system is marked with a red ring to warn the operator for an immediate and automatic stop, if the door gets open.

2.7.2.12 Safety Marking on the Pin Roller Drive on the Left Machine Side

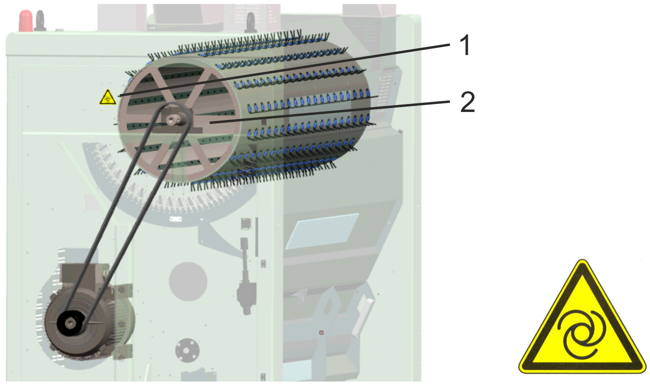


Figure 20: Safety marking on the pin roller drive on the left machine side

The pin roller drive 2, the main drive, can start automatically.

Therefore, the safety marking Warning of automatic start-up 1 appears next to the pin roller drive.

2.7.2.13 Safety Marking on the Pin Roller Drive on the Right Machine Side

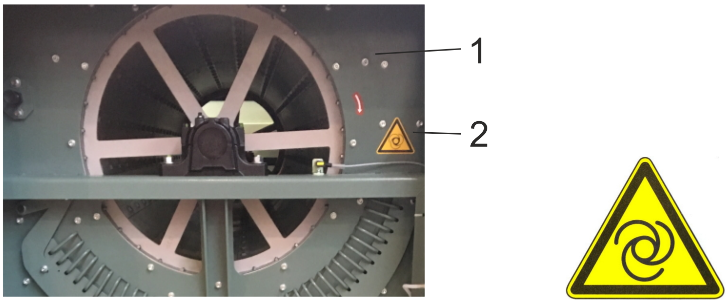


Figure 21: Safety marking on the pin roller drive on the right machine side

The pin roller drive 2, the main drive, can start automatically.

Therefore, the safety marking Warning of automatic start-up 1 appears next to the pin roller drive.

2.7.2.14 Safety Marking on the Lock Roller Drive

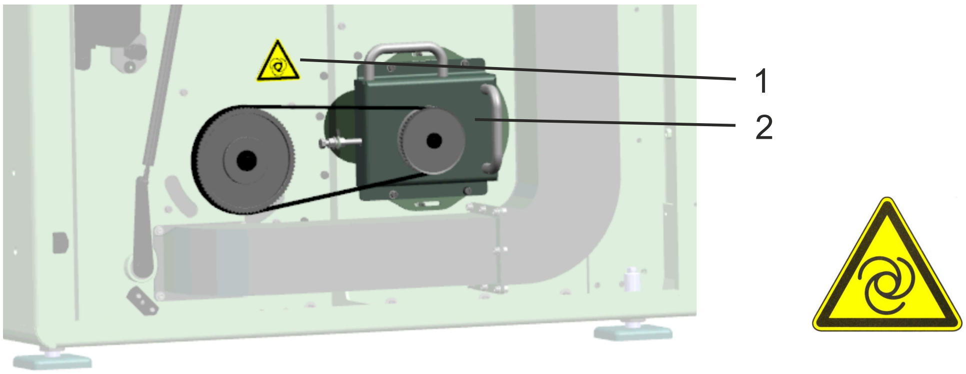


Figure 22: Safety marking on the lock roller drive

The lock roller drive 1 can start up automatically.

Therefore, the safety marking Warning of automatic start-up appears next to the lock roller drive.

2.7.2.15 Piping

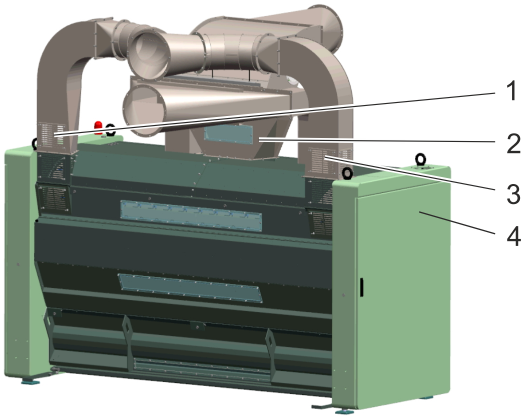


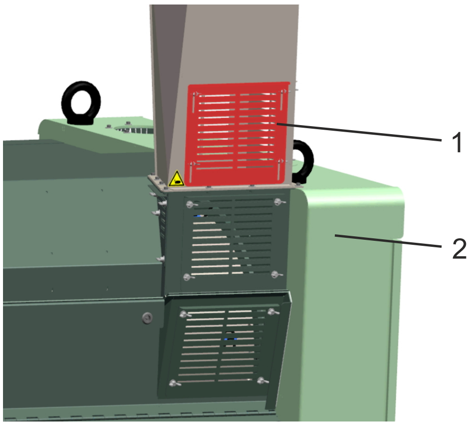
Figure 23: Piping

Piping elements are safety devices.

- After installation or after repair of the machine, do not start-up the machine 4 until the piping elements 1, 2, 3, are connected. This prevents access to the rotating pin roller from above.
- If the connecting pipe is removed at the top of the machine, then mount the cover supplied.

Operate the machine only with the pipes connected.

2.7.2.16 Technology Opening



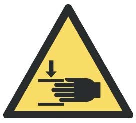


Figure 24: Technology opening

The technology opening is limited to the sampling process to get hold of fiber tufts through the opening and to pull them out.

Operate the machine only with closed technology openings.

Rotating components are located behind the grids.

2.7.2.17 Control Cabinet

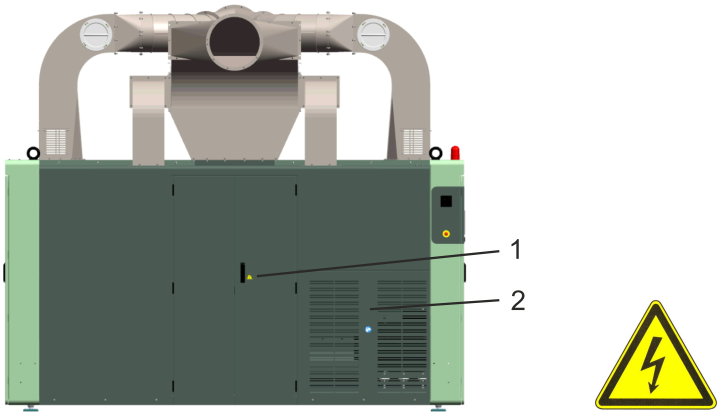


Figure 25: Control cabinet

The safety marking Warning to electrical voltage is located on the control cabinet 1.

A residual voltage may be present on components in the electrical cabinet. There are high-voltage and low-voltage cables and they are not individually and clearly marked.

2.7.2.18 Safety Cover Main Drive

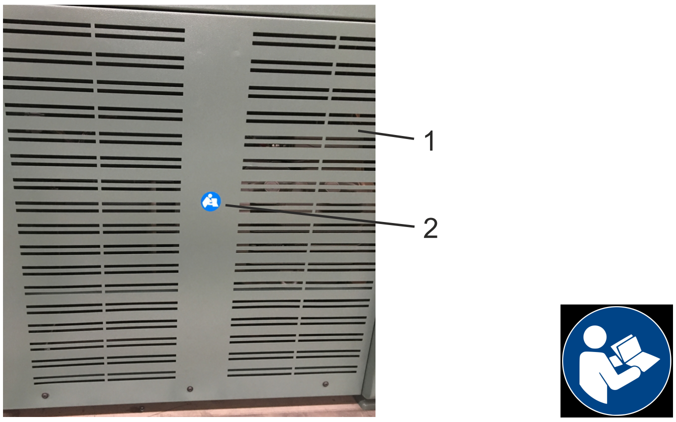


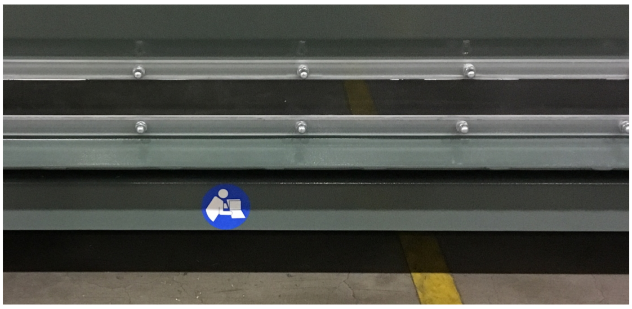
Figure 26: Safety cover main drive

Read the operating instructions.

On the drive side of the machine there is a protective shield in front of the main drive.

The shield has large slots for cooling the motor. Rotating components are located behind the grids.

2.7.2.19 Safety on the Lock Roller



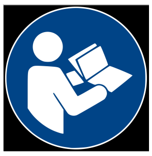


Figure 27: Safety on the lock roller

Read the operating instructions.

Only in a special modus the lock roller can be manually rotated.

2.7.2.20 Safety Marking Meaning

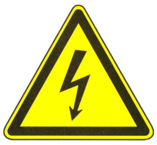


Figure 28: Safety marking meaning

Safety marking meaning: Warning of electrical voltage

2.7.2.21 Safety Marking Meaning

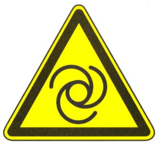


Figure 29: Safety marking meaning

Safety marking meaning: Warning of automatic start-up

2.7.2.22 Safety Marking Meaning

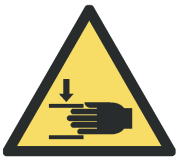


Figure 30: Safety marking meaning

Safety marking meaning: Warning of hand injuries

2.7.2.23 Safety Marking Meaning

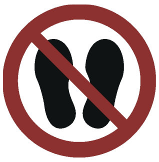


Figure 31: Safety marking meaning

Safety marking meaning: No one may enter the area

2.7.2.24 Safety Marking Meaning

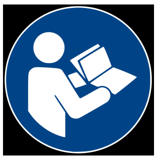


Figure 32: Safety marking meaning

Safety marking meaning: Follow the instructions

2.7.3 Responsibilities and Qualifications

Responsibilities

By clear rules defining who is responsible for what, the customer creates optimum requirements for ensuring safety in the plant.

The areas of responsibility for each authorized person must be officially laid down. This applies in particular to jobs involving setting and servicing mechanical, electric and pneumatic devices.

This guarantees that unauthorized persons do not have access to the machines.Visitors may enter machine rooms only if accompanied by an authorized person.

It must be made clear to visitors that machines are a potential source of danger when running.

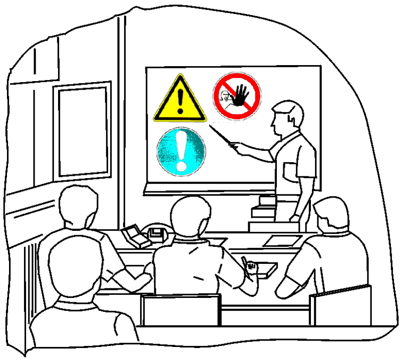


Figure 33: Responsibilities and qualifications

Training

Inadequately trained staff may cause accidents. This may also result in injury to others.

Operating and maintenance staff must be given theoretical and practical training.

This is the general purpose of this part of the instructions.The corresponding operating information in the instructions refers to specific dangers and must always be observed.

If well-trained personnel are in charge of machines, then these will produce a higher yield and a better quality, and there will be fewer faults, higher output and fewer injuries.

2.8 Safety Precautions

2.8.1 Safety Precautions during Dismantling

When tackling dismantling jobs it is necessary to take suitable safety precautions.

Prerequisites Make sure that the criteria are obeyed:

✓ The main switch is set to the position OFF and the main switch is padlocked.

All jobs requiring these security measures are indicated by an appropriate symbol on the particular page.

2.8.2 Safety Precautions during Installation

Prerequisites Make sure that the criteria are obeyed:

✓ The main switch is set to the position OFF and the main switch is padlocked.

All jobs requiring these security measures are indicated by an appropriate symbol on the particular page.

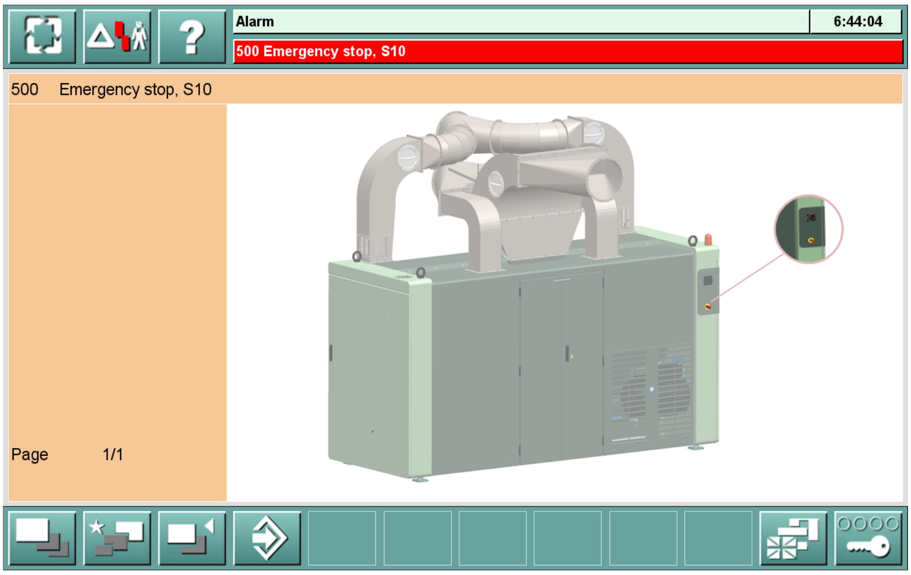
2.8.3 Safety Precautions during Adjusting Jobs

When tackling adjusting jobs it is necessary to take suitable safety precautions.

2.9 Safety Devices on the Machine

2.9.1 Alarm, EMERGENCY STOP on the Machine Triggered

Alarm, EMERGENCY STOP on the Machine Triggered



Alarm 6:44:04

500 Emergency stop, S10

500 Emergency stop, S10

Page 1/1

Figure 34: Alarm

Alarm, EMERGENCY STOP on the machine triggered.

2.9.2 Emergency Release Safety Switch

Emergency Release Safety Switch

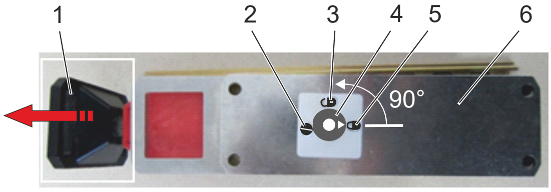


Figure 35: Emergency release safety switch

Prerequisites Make sure that the criteria are obeyed:

✓ The safety switch can only be replaced if the safety switches are unlocked manually.

1. Turn off the machine with the main switch.
2. Remove the plug from the hole in the door.
3. Through the hole in the door, loosen the safety screw 2 from the safety switch 6 until the unlocking disc can be rotated.

4. Turn the unlocking disc with the arrow 4 with an SW 10 Allen key anticlockwise 90° from the symbol Lock secured 5 to the symbol Lock opened 3. The plate on the safety switch and the actuator with the SW 10 socket spanner are additional components from RIETER.

   ⇨ The actuator 1 can be pulled out. In this manner, the door can be opened.

5. Turn back the unlocking disc with the arrow to the symbol “Lock secured” using the SW 10 socket spanner.

   ⇨ In this manner, door locking is functional again.

6. Tighten the safety screw.
7. Seal the safety screw, the cover plate and the space between the cover and switch housing with locking varnish.
8. Seal the hole in the door with the plug.
9. When replacing or if there is a fault message, ensure that the safety disc on the front side and the rear side of the safety switch is at the Lock secured position.

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3 Product Information

This chapter contains the information about the basic machine functions and the primary machine assemblies. This chapter contains the information about the location of the machine identification plate and the technical data of the machine.

3.1 Technical Data

The technical information is for a standard machine.

3.2 Function Description

The chapters that follow contain the information about the function of the machine and the primary components.

3.3 Control Elements

The information that follows is about the control elements on different machine parts.

3.4 Raw Materials

The machine only uses the textile raw materials that follow:

Cotton	From all sources
Man made fiber	Natural and synthetic polymers
Maximum staple length	60 mm

3.5 Product Information

This chapter gives an introduction to the machine and the technical data.

3.6 Machine Identification

Manufacturer

Rieter Machine Works Ltd.

Klosterstrasse 20

CH-8406 Winterthur

Tel. no.: +41 52 208 71 71

Fax: +41 52 208 70 60

3.6.1 CE Nameplate

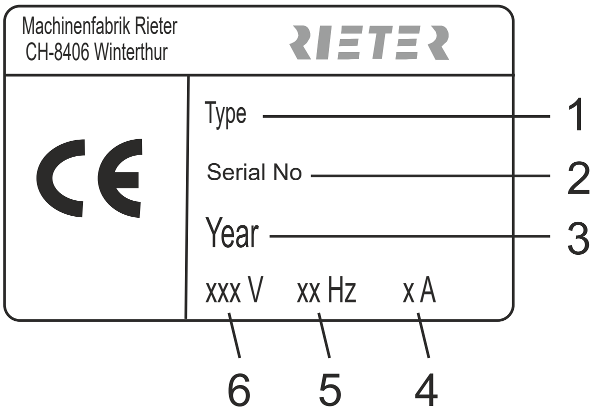
Machinenfabrik Rieter
CH-8406 Winterthur
Type
Serial No
Year
xxx V
xx Hz
x A
1
2
3
6
5
4

Figure 36: CE nameplate

1	Type	Machine type	2	Serial no.	Serial number
3	Year	Year of manufacture	4	A	Rated current
5	Hz	Frequency	6	V	Voltage

The CE nameplate is located in the area of the main switch.

3.6.2 Electrical Ratings Plate

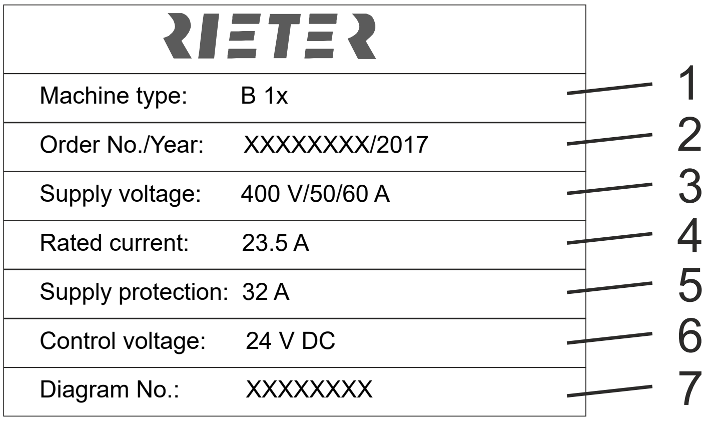
Machine type: B 1x
Order No./Year: XXXXXXXX/2017
Supply voltage: 400 V/50/60 A
Rated current: 23.5 A
Supply protection: 32 A
Control voltage: 24 V DC
Diagram No.: XXXXXXXX
1
2
3
4
5
6
7

Figure 37: Electrical ratings plate

1	Machine type	2	Order no./year
3	Supply voltage	4	Rated current
5	Supply protection	6	Control voltage
7	Diagram no.		

The electrical ratings plate are adhesively fastened in the electrical system cabinet. When ordering spare parts, transfer the information stated on the electrical ratings plate to the order form. For messages concerning malfunctions, specify the machine type, the order number and the year.

3.7 Machine Description

3.7.1 UNIclean

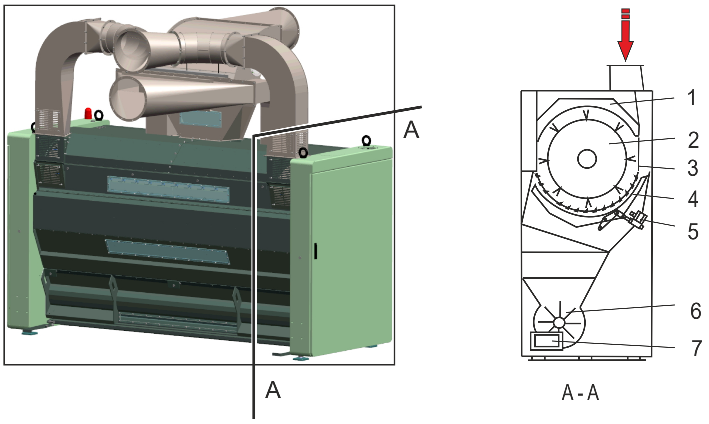

Figure 38: UNIclean

1	Guide plate	2	Cylinder
3	Perforated plate	4	Grating
5	Electric cylinder	6	Lock roller
7	Waste transport		

3.8 Technical Definitions and Formulas

Determine Waste Volume

$$A\ [\%] = \frac{Am\ [kg]}{P\ [kg]} \times 100\ [\%]$$

Figure 39: Determine waste volume

Calculation of the proportion of waste: Normal test duration is three times one half hour. For a provisional waste measurement, carry out at least one or a number of UNIfloc passages.

A = Waste percentage

AM = Waste volume

P = Production

Stop/Go Ratio

$$\text{Stop/Go} = \frac{\text{UNIfloc}_{Bz}\ [\text{min}]}{\text{UNIfloc}_{Effz}\ [\text{min}]}$$

Figure 40: Stop/Go ratio

Stop/Go = Stop/Go ratio

UNIfloc = Machine

Bz = Effective feeding time

Effz = Observation period

Actual Production

$$P = \frac{(\ Kp\ [\text{kg/h}] + A\ [\text{kg/h}]\ )}{\text{Stop/Go}}$$

Figure 41: Actual production

P = Actual production

Kp = Card production

A = Waste

Stop/Go = Stop/Go ratio

3.9 Specifications

3.9.1 Performance Characteristics

Raw Material

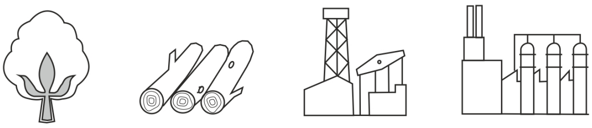

Figure 42: Performance characteristics

Raw material	Intended Use: This machine is built exclusively for processing textile raw materials. Non-textile raw materials must not be processed on the UNIclean
Cotton	From all sources

Production

B15	2400 kg/h

– Equipment (Alternative):

3.9.2 Dimensions

3.9.2.1 Space Requirements

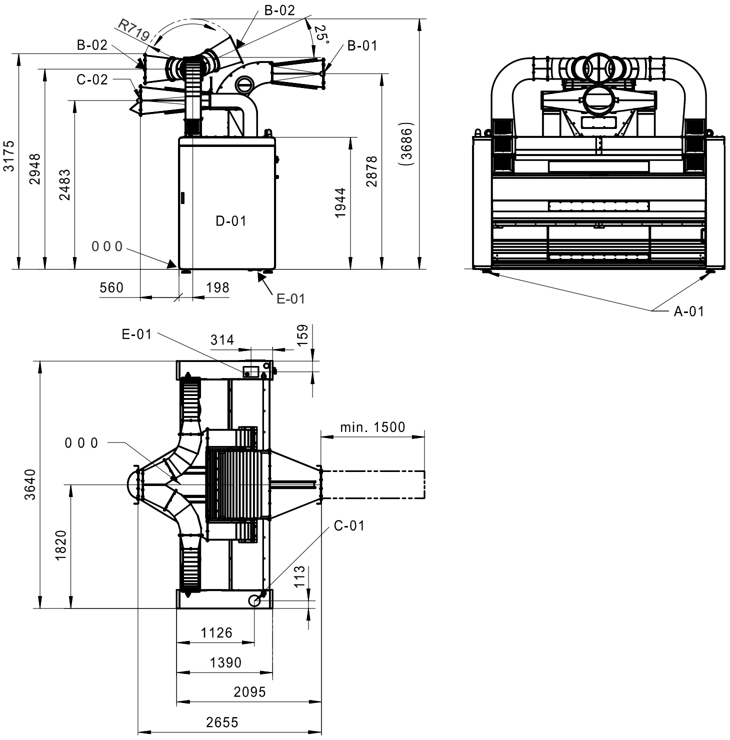
B-02
R719
25°
B-02
B-01
C-02
3175
2948
2483
(3686)
2878
1944
D-01
0 0 0
560
198
E-01
A-01
E-01
314
159
0 0 0
min. 1500
3640
1820
C-01
113
1126
1390
2095
2655

Figure 43: Space requirements

Location number	Designation	Prerequisite	Dimension
A-01	Floor loading per foot	4x Diameter 120 mm	4x 7500 N
B-01	Material input		Diameter 400 mm
B-02	Material output		Diameter 400 mm
C-01	Waste exit		Diameter 160 mm

C-02	Exhaust air		Diameter 400 mm
E-01	Electrical connection		215x150 mm
D-01	Cleaner		3000 kg

3.9.2.2 Space Requirement

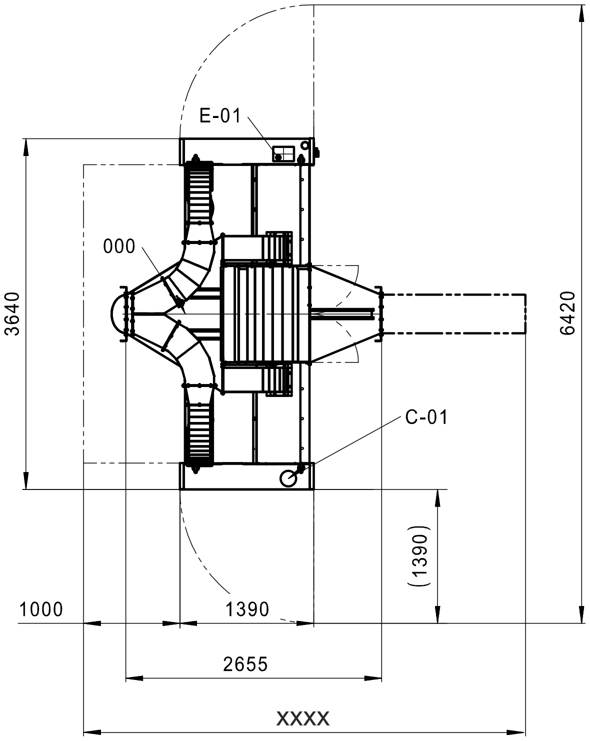
E-01
000
3640
6420
C-01
(1390)
1000
1390
2655
XXXX

Figure 44: Space requirement

Location number	Designation	Prerequisite	Dimension
C-01	Waste exit		Dimension 160 mm
E-01	Electrical connection		215x150 mm

3.9.2.3 Fundation

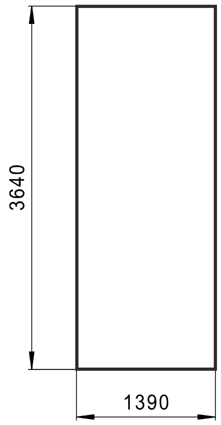

Figure 45: Fundation

Location number	Designation	Prerequisite	Dimension
Floor conditions	Difference of level		3 mm per meter floor

3.9.3 Weights

Designation	Prerequisite	Weights
Machine		3000 kg

3.9.4 Floor Structure

⚠ **CAUTION**

Unstable floor structure

Risk of damage to machine

✓ Produce a stable floor structure.

▶ Set up the floor structure according to the load.

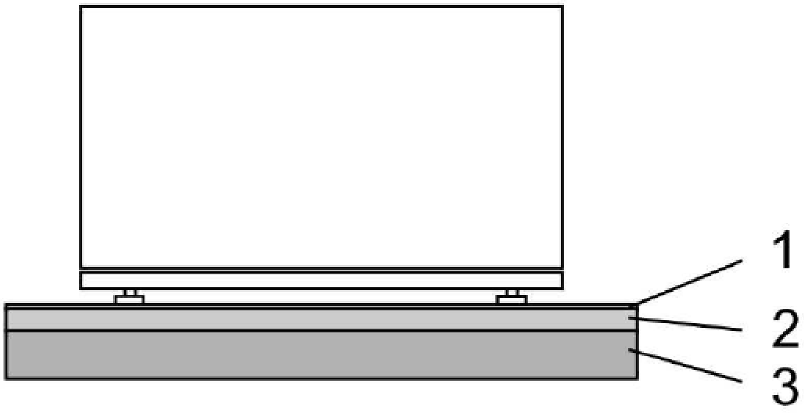

Figure 46: Floor structure

1	Flooring	2	Intermediate layer
3	Floor plate (concrete)		

1. Check the floor condition requirements.
2. For the weight distribution of the machine, refer to the documentation.
3. Leave the floor construction work to a specialist.
4. Replace intermediate layers composed of slag, sand, asphalt, etc. with concrete. Operation of the machine gives rise to vibrations. Vibrations will cause loose intermediate layers to be displaced, and the floor to become unstable as a consequence; this will result in individual machine subassemblies lowering. In case of soft floor coverings such as linoleum, xylolite or wood, the concrete base should have the height of the finished floor.

3.9.5 Machinery Requirements

3.9.5.1 Air Conditions

Air Conditions

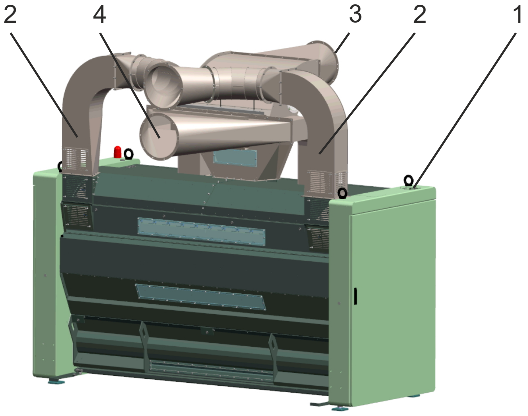

Figure 47: Air conditions

Waste transport 1 Air flow rate	0.55 m³/s
Waste transport 1 Static vacuum	- 1000 Pa
Material outlet 2 Air flow rate per side	0.60 - 0.80 m³/s
Material outlet 2 Static vacuum	- 50 to – 200 Pa
Flow rate at material entry point 3 Air flow rate	1.5 - 2.0 m³/s
Flow rate at material entry point 3 Static excess pressure	- 15 Pa
Dedusting 4 Air flow rate	1.5 - 2.0 m³/s
Dedusting 4 Static vacuum	- 400 - - 700 Pa

3.9.5.2 Electrical Data

Main Connection

If the mains voltage is not within the specified range, a transformer must be used to ensure stable conditions.	3 x 400 V +/- 10%

Voltage	400 V
Fuse	63 A
Electrical main line	4x16 mm 2
Electrical control	14 PE

Grounding the Machine

Grounding of the machine	See electrical diagram

Installed Electrical Power

Machine-specific data	See electrical diagram

Direction of Rotation of the Motor on the Pin Roller

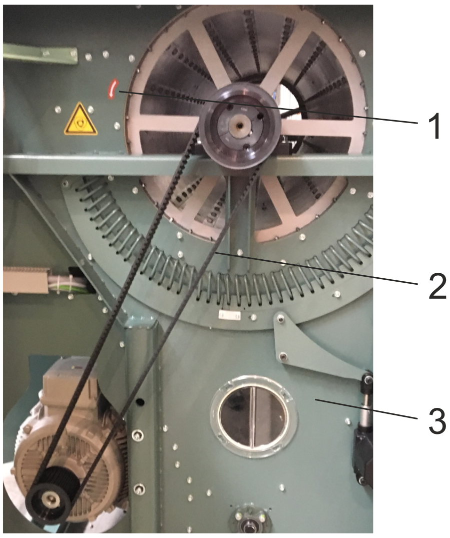

Figure 48: Direction of rotation of the motor on the pin roller

Direction of rotation of the motor and the toothed belt 2, right machine side 3	Red arrow 1

Sticker on the Machine for Belt Tension on the Pin Roller

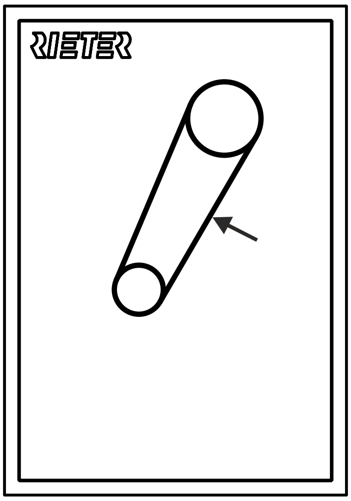

Figure 49: Sticker on the machine for belt tension on the pin roller

Belt tension	21 Hz

Direction of Rotation of the Motor on the Lock Roller

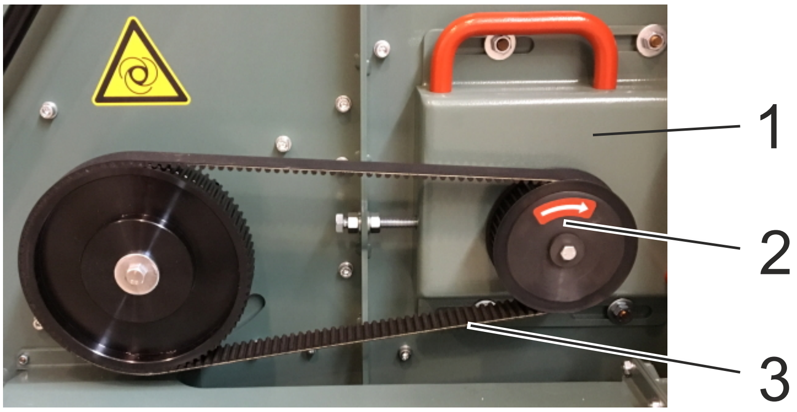

Figure 50: Direction of rotation of the motor on the lock roller

Direction of rotation of the motor and the toothed belt 2, right machine side 3	Red arrow 1

Sticker on the Machine for Belt Tension on the Lock Roller

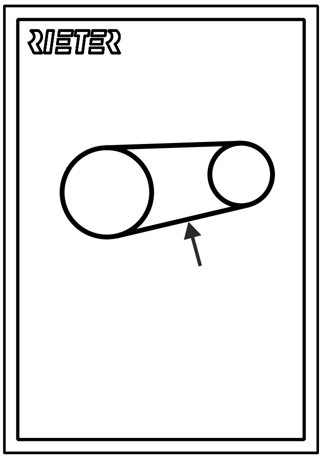

Figure 51: Sticker on the machine for belt tension on the lock roller

Belt tension	133 Hz

3.9.6 Emissions

3.9.6.1 Airborne Noise Emission

Sound Power Level of the Machine LWAd

Operating status without material: Normal production	81 dB (A)

Measurement standard: Condition: Without material, without external fans, cylinder speed 960 rpm.

3.10 Transporting and Installing the Machine

3.10.1 Air Properties

1. Set the suction values.

Set the suction values ▶ *60*

Activate the safety limit switch ▶ *21*

3.11 UNIclean

3.11.1 Description

Purpose: The UNIclean is a cleaning and dedusting machine for all types of cotton. The combination of cleaning intensity and waste volume ensures good cleaning with few good fibres in the waste. Impurities are separated gently and effectively. The raw material is not nipped.

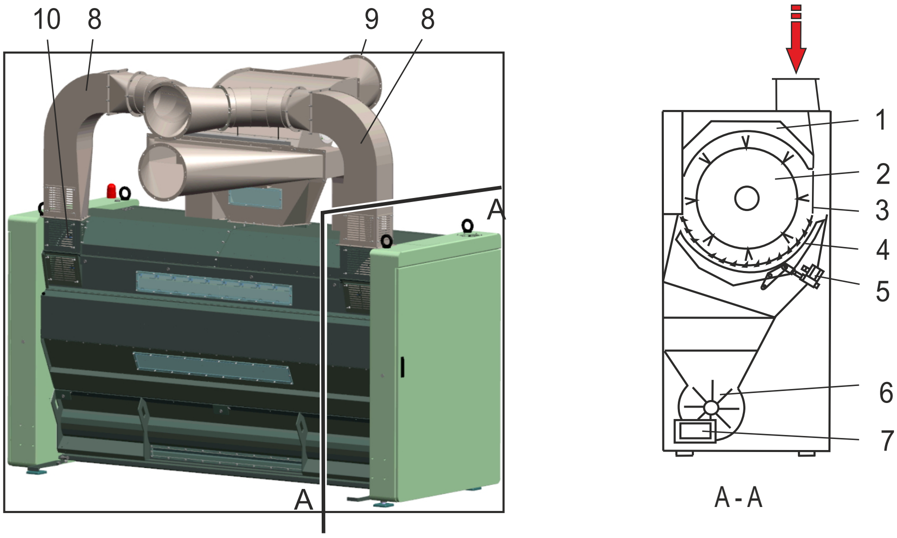

Figure 52: Description

Method of Operation

- The material is fed through the pipe connection 9.
- The cleaned material is suctioned off at the connection 8 and transported to the next machine.
- Part of the incoming transport air is suctioned off via the perforated plate 3 by the fan. Thus, the raw material is dedusted.
- The opening for the auxiliary air 10 ensures a reliable further transport of the tufts.
- With the slide valves, the volume of auxiliary air is varied.

Purpose: Cleaning

Method of Operation

- The tufts are collected by the cylinder fitted with special tines 2.
- The cleaning intensity, depending on the speed of the cylinder, can be variably adapted to the raw material while the machine is running.
- The guide plates 1 guide the tufts in spirals several times over the grating 4.

- The waste quantity (grating angle) can be flexibly varied via the electric cylinder while the machine is running.
- The waste is removed periodically via the lock roller 6 and via the pipework 7. The interval is determined by the pneumatic waste transport system.
- The lock roller separates the waste chamber from the transport air for the waste in the pipework. This does not affect the waste discharge at the grating.

3.11.2 Set the Suction Values

Transporting and Installing the Machine ▶ 65

Setting the Suction Volumes for Material Transport

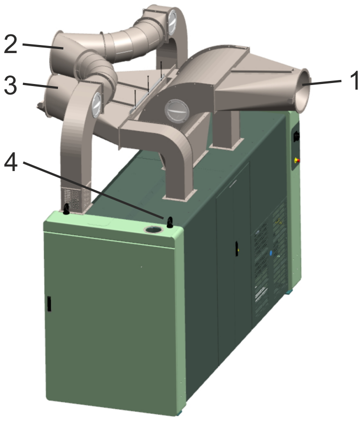

Figure 53: Setting the suction volumes for material transport

Prerequisites Make sure that the criteria are obeyed:

✓ The main switch is set to the position OFF and the main switch is padlocked.

Measure the air volume in a straight section of the pipework.

Values

Extraction point for upstream machine 1 Air flow rate	See operating manual
Measuring point for material entry 1 Air flow rate	1.5 - 2.0 m³/s
Measuring point for material entry 1 Static excess pressure	- 15 Pa
Measuring point of material discharge 2 Air flow rate	0.60 - 0.80 m³/s
Measuring point of material discharge 2 Static vacuum	- 50 - - 200 Pa

Ideally, each measuring point should be at a distance of 10 times the pipe diameter ahead of or beyond a bend, funnel, transition section etc.

Setting the Suction Values for the Exhaust Air

Set the value at the measuring point 2.

Values

Measuring point for exhaust air 2 Air flow rate	1.6 m³/s
Measuring point for exhaust air 2 Static vacuum	- 400 - - 700 Pa

Adjusting the Vacuum for the Material Transport

A slight vacuum must be measured at the measuring point 3. Air containing dust must never be blown out in the event of an incorrect air intake.

Values

Measuring point for exhaust air 3 Air flow rate	1.6 m³/s

Setting the Suction Value for the Waste

Set the suction device to the specified value 1.

Values

Waste transport 4 Air flow rate	0.8 m³/s
Waste transport 4 Static vacuum	- 1000 Pa

3.12 Control Technique

3.12.1 Basic Module of the Control System

3.12.1.1 Cold Start with Reset Button on CPU/battery

Controller B+R ▸ 108

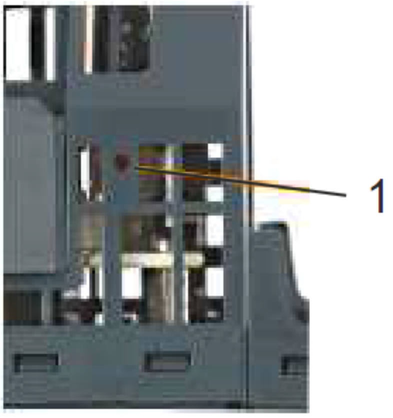

Figure 54: Cold start with reset button on CPU/battery

Cold Start with Reset Button on CPU/Battery

The reset button is located below the USB interface on the housing base.

Trigger a hardware reset with the reset button. To do this, push the reset button 1 with a pointy object, e.g. with a paper clip.

The machine control software is stopped. The outputs are set to zero. A cold start is performed.

After the reset button is pushed the machine starts to boot.

3.13 Frequency Converter

3.13.1 Identifying the Frequency Converter

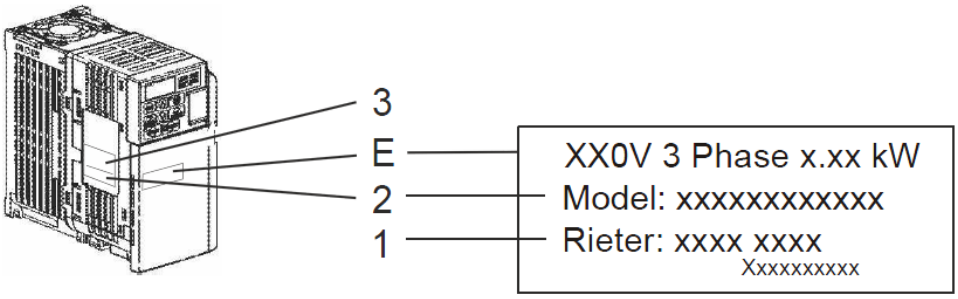

Figure 55: Identifying the frequency converter

The RIETER part number 1 on the label E must match with the part number of the device in the electrical documentation. The model designation 2 must match with the designation on the manufacturer’s label 3 found on the frequency converter.

3.13.2 Regenerating the Replacement Frequency Converter

WARNING

Non-adherence to discharge time

Risk of death or severe injury

- ✓ After disconnecting from the mains, wait for 10 minutes (discharge time).
- ✓ Only qualified electricians are permitted to work at the frequency converter.
- ▶ Do not touch any live parts.
- ▶ Wait until the LED is no longer lit.

Connect stored replacement frequency converters every six months for at least one hour to the mains without load for regeneration. This allows the internal components to regenerate themselves. The replacement device is ready for use.

Remove the frequency converter.

Remove the frequency converter ▸ 164

Install the frequency converter.*Install the frequency converter ▸ 167*

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4 Packaging and Transportation

This chapter contains the information about the packaging, packaging accessories, and the instructions on the safe machine transport.

4.1 Transportation of the Machine to the Installation Site

The customer is generally responsible for the unloading and the transportation to the installation site. Under normal circumstances, the unloading and transporting of a component to the installation site is not carried out by installation personnel. Nevertheless, occasions may arise where guidance is needed. This should only be provided to a limited extent however, so as to ensure that our installation personnel cannot be held responsible for any damage that may arise.

4.2 Transporting and Installing the Machine

4.2.1 Assembly Instructions

Select set-up location.

Lifting the machine with round hooks ▶ 65

Transportation of the machine with the fork lifter ▶ 66

Moving the machine with roller lifters ▶ 66

Remove the transport locks on the pin roller ▶ 67

Leveling the machine ▶ 68

4.3 UNIclean

4.3.1 Lifting the Machine with Round Hooks

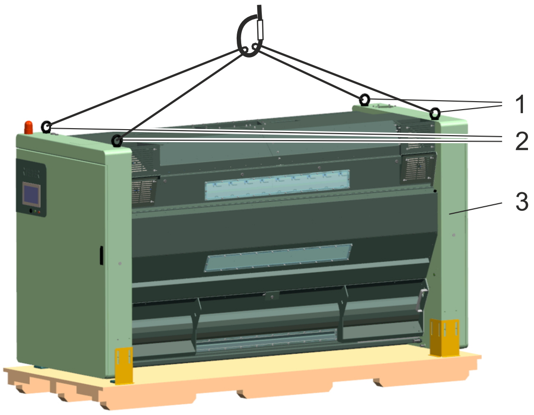


Figure 56: Lifting the machine with round hooks

Lifting the Machine with Round Hooks

CAUTION

Hanging load!

Risk of injury

- ▶ Do not step under suspended loads.
- ▶ Use only tested lifting equipment.

1. Attach the transport ropes to the round hooks 1, 2.
2. Lift the machine 3.

4.3.2 Transportation of the Machine with the Fork Lifter

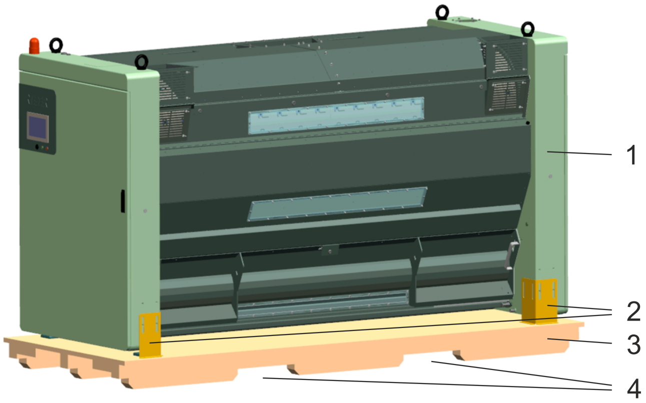


Figure 57: Transportation of the machine with the fork lifter

Transporting the Machine with a Fork Lifter

CAUTION

Tipping load!

Risk of injury

- ▶ Transport the load only in a lowered position.

1. The machine 1 is bolted to the transport pallet with four adapters 2 for transport.
2. Insert the forklift in the recesses 4 of the transport pallet 3.
3. Lift the machine.

4.3.3 Moving the Machine with Roller Lifters

Transporting and Installing the Machine ▸ 65

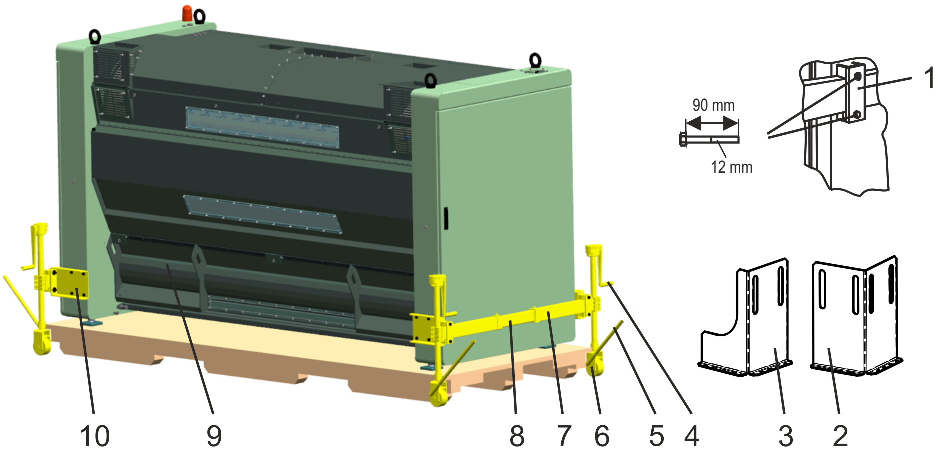


Figure 58: Moving the machine with roller lifters

Moving the Machine with Roller Lifters

CAUTION

Tipping load!

Risk of injury

▶ Transport the load only in a lowered position.

1. The machine 9 is secured during transport. The machine is secured on the transport pallet with the adapters 2 and 3.
2. Remove the adaptors 2 and 3.
3. Because there is still no power supply, open the doors manually. Open the doors with a SW10 socket spanner.

   Manually opening the doors in de-energised status ▸ 115
4. Mount the four adapters 10 on the machine to secure the swivel castor lift.
5. Screw the swivel castor jacks to the profiles 7 with the parts 1. Do not extend the extension 8 beyond the maximum.
6. Guide the castor jacks with the guide rod 5. With the crank 4, adjust the height of the machine over the floor. Four persons are necessary to operate the castor jacks, who simultaneously lift the machine, drive or rotate.
7. The castor jacks are provided to remove the transport palette and to place the machine on the installation site. To transport the machine over longer distances, lower the machine up to five cm above the ground.
8. Remove the castor jacks.

4.3.4 Remove the Transport Locks on the Pin Roller

Transporting and Installing the Machine ▸ 65

Remove the Transport Locks on the Pin Roller

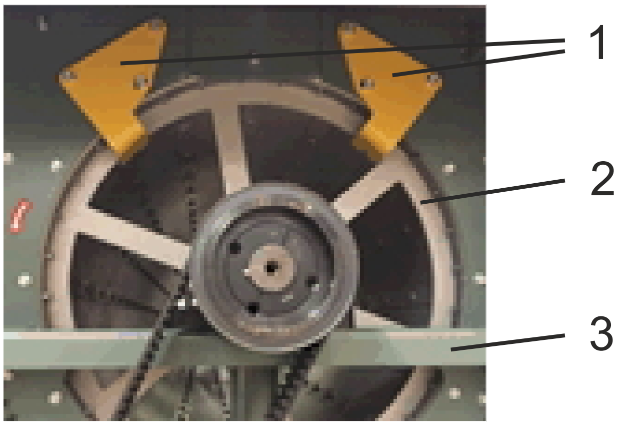


Figure 59: Remove the transport locks on the pin roller

1. Remove the transport locks 1 on the pin roller 2 on both sides of the machine. The transport safety device consists of two safety devices on each side. Remove the transport locks before operating the machine 3.

4.3.5 Leveling the Machine

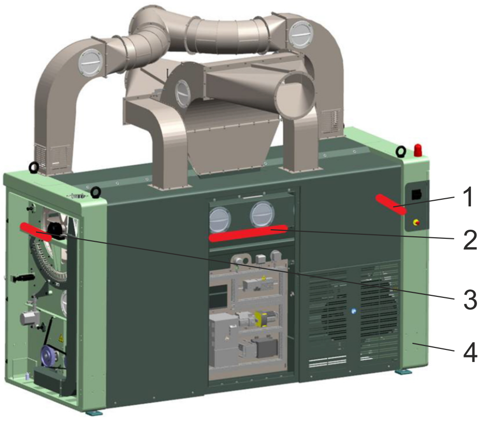


Figure 60: Leveling the machine

Leveling the Machine

1. Level the machine 4 as tested at the factory.
2. Place the spirit level on the crossbars in the electric cabinet 2, on the crossbars next to the pin roller bearing 3 and on the crossbars on the left-hand side 1 of the machine.
3. Level the machine in longitudinal and transverse direction. Use the levelling screws.

5 Installation

This chapter contains the information about the site preparation for the machine and the installation of the machine. Only Rieter technicians or Rieter-approved technicians are permitted to install the machine.

5.1 Installation Personnel

Only Rieter personnel or Rieter-approved personnel are permitted to install the machine.

5.2 Installing the Machine

5.3 Prerequisites

This section contains the information about the prerequisites for the machine installation.

- The customer gives an introduction to the danger zones of the installation site. All user groups must know the general safety regulations.
- The customer takes the measures for the primary organizational safety.
- The customer gives the information about the construction-related measures to make sure that the work on the site is fully safe.
- The customer must install the necessary railings.
- The training for the personnel is given before the installation.
- A continuous change of the personnel during the installation is not permitted.
- The installation personnel must have access to the operation manuals.

5.4 Unpacking

1. Open the material boxes.
2. Examine the transport damage.
3. If damage in the machine found, Tell the customer to claim to insurance office.

Result The boxes are unpacked.

5.5 Cleaning the Installation Location

Prerequisites Make sure that the criteria are obeyed:

✓ 1 piece of brush or 1 set of vacuum cleaner is to be used.

1. Remove the crates and pallets that are with the machine parts.
2. Clean the floor with the brush or the vacuum cleaner.
   ⇨ The floor is as dust-free as possible.

Result The installation location is cleaned.

5.6 Gearing Layout

5.6.1 Cylinder

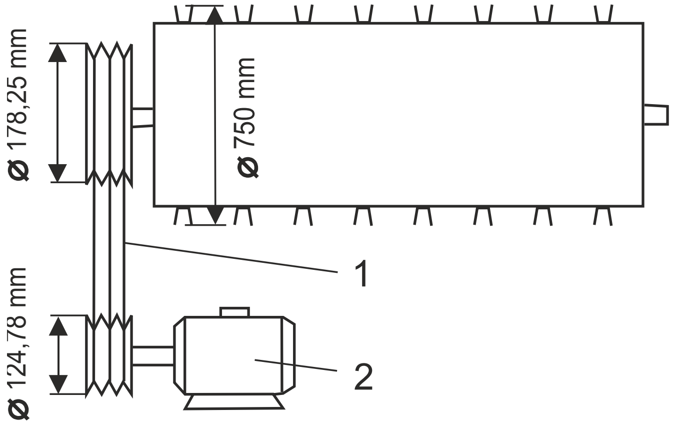

Ø 178,25 mm
Ø 750 mm
1
Ø 124,78 mm
2

Figure 61: Cylinder

1 Toothed belt	**2** Motor with motor pulley

Cylinder speed

Cylinder speed

Cylinder speed	480 – 960 rpm

5.6.2 Cylinder

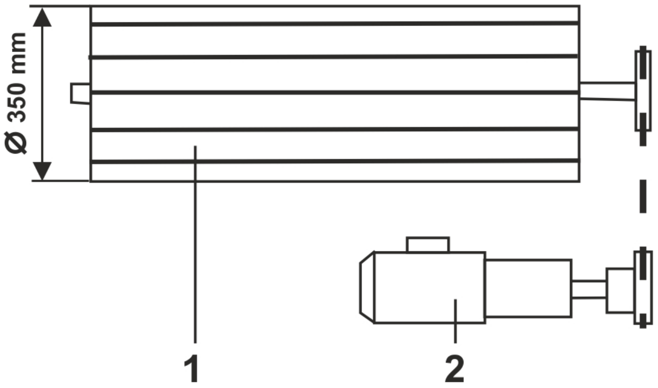


Figure 62: Cylinder

1 Lock roller	**2** Gear motor

Lock roller speed

Lock roller speed

50 Hz	24.8 rpm
60 Hz	29.7 rpm

5.6.3 Grid

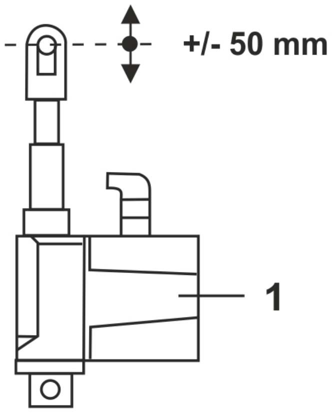


Figure 63: Grid

1	Grating adjustment

Electric cylinder

Electric cylinder

Thrust	4000 N
Stroke	100 mm
Lifting speed	8 mm/s

5.7 Machine Set up; Optimise Settings

5.7.1 Cylinder

5.7.1.1 Double Tines

Replace damaged tines.*Install the double tines* ▸ *72*

5.7.1.2 Speed is Incorrect

Check and, if necessary, adjust the proximity switch.*Proximity switch* ▸ *72*

5.8 Cleaning Point

5.8.1 Cylinder

5.8.1.1 Double Tines

5.8.1.2 Install the Double Tines

Install the Double Tines

Prerequisites Make sure that the criteria are obeyed:

✓ The main switch is set to the position OFF and the main switch is padlocked.

1. Use only original double tines (special raw material).
2. Degrease the bolts 1. Treat with activator.
3. Coat the front part of the bolts 1 with Loctite 243.
4. Place 5 two drops of Loctite 243 medium-strength into the welded nuts.
5. Tighten the screws M8 with 40...45 Nm.

5.8.1.3 Proximity Switch

5.8.1.4 Proximity Switch

Cylinder ▸ 71

Determine the Speed of the Cylinder

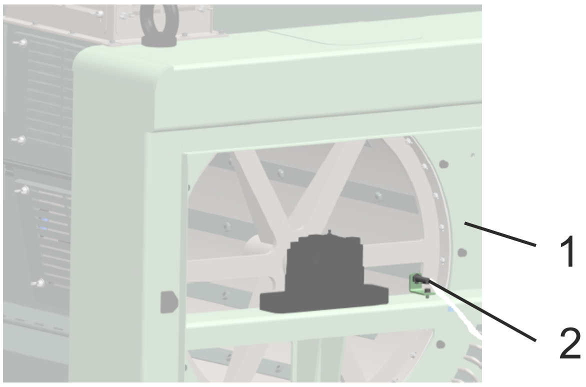


Figure 64: Proximity switch

The proximity switch is used to determine the speed of the cylinder.

The proximity switch 1 is on the pin roller 2. Use both nuts to set the proximity switch to 0.8...1.0 mm.

When the proximity switch is activated, the LEDs are lit up.

6 Display Elements and Operating Elements

This chapter contains the information about the elements that are used to operate the machine.

6.1 Operating Elements

This section contains the information about the operating elements of the machine.

6.2 Display Elements

This section contains the information about the display elements of the machine.

6.2.1 Operating and display elements

6.2.1.1 Lamp

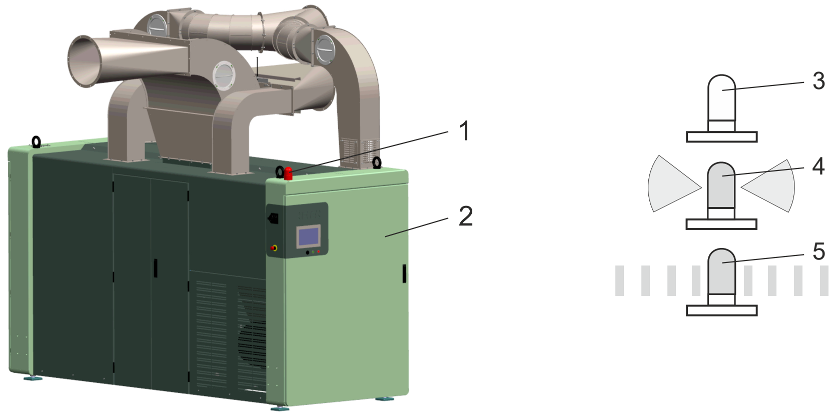


Figure 65: Lamp

Type of element: The lamp 1 on the machine 2 indicates the following operating states:

Display State

- 3 Light does not light up:

No mains voltage.

The main switch is in off position.

The machine is producing.

- 4 Light lights up:

The main switch is on.

The machine is ready to start.

A fault has occurred.

- 5 Lamp flashes:

A warning is present.

The machine continues to produce.

6.2.1.2 Panel

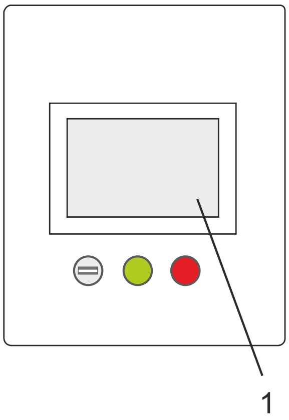


Figure 66: Panel

Type of element: Operation of the machine via panel 1

6.2.1.3 Buttons on the Panel

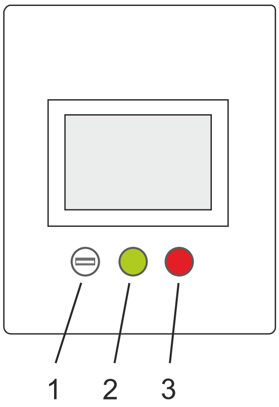


Figure 67: Buttons on the panel

Type of element: Operation of the machine via keys

USB connection 1, green key 2 for starting the machine, red key 3 for stopping the machine.

Display State

- Via the USB connection, data can be transferred to the controller or data can be stored by the controller.

- The machine is started via the green START key. Pushing the START key causes the production mode to be activated. If the machine cannot be started, the cause is indicated as fault message. In service mode, pushing the START key causes the currently selected function to start.
- The machine can be stopped with the red STOP key. The STOP key causes the production mode or the currently active sequence of movements to stop.

6.2.1.4 EMERGENCY STOP button

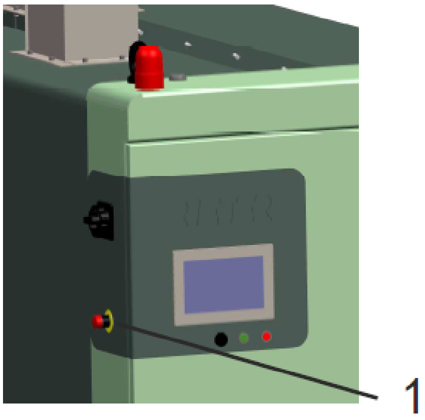


Figure 68: EMERGENCY STOP button

Type of element: EMERGENCY STOP button

With the EMERGENCY STOP switch 1 the machine is stopped in an emergency. The drives will be stopped. The machine cannot be started, as long as the EMERGENCY STOP button is actuated.

6.2.1.5 Main switch

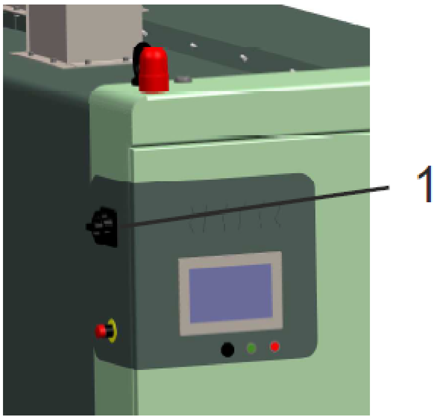


Figure 69: Main switch

Type of element: Main switch

With the main switch 1 the operating voltage is switched on or off. Switched off in position 0: The machine has no operating voltage. The machine cannot be started. Switched on in position 1: The machine ready to start. Turn off the main switch and secure it with a padlock when performing the following tasks: Maintenance, Repair.

6.2.1.6 Safety switch with guard locking

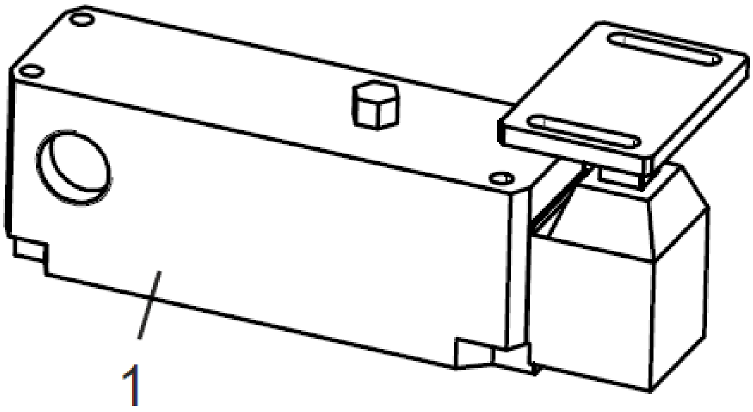


Figure 70: Safety switch with guard locking

Type of element: The safety switch with guard locking 1 prevents the doors on the machine from being opened when the machine is running. The door can only be opened when the drives are at a standstill.

6.2.1.7 Lock roller key

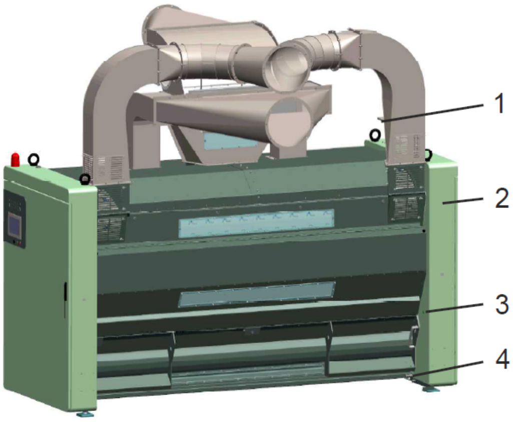


Figure 71: Lock roller key

Type of element: Lock roller key

1. Close the slider 1.
2. Log on to the control unit with the required authorisation.
3. Open flap 4 by handles.

4. Select the ejector roller wrench 3 on the right, front side of the machine 2.
5. The ejector roller rotates as long as the button remains pushed.

Result The amount of waste is determined.

6.2.1.8 Operating Page of the Control System, Operating Elements, Header

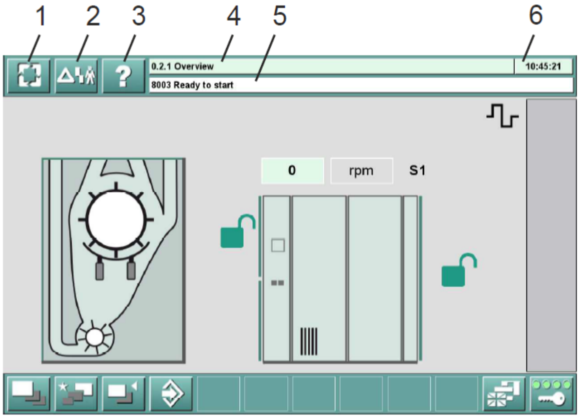


Figure 72: Operating page of the control system, header

Type of element: Operating page of the control system, operating elements, header and inner area

On the operating page of the controller the following settings can be made:

Display State

- Machine mode Automatic/service 1
- Navigation to alarms/warnings 2
- Screen shot, context help, help 3
- Current page 4
- Current machine status 5
- Time on the controller 6

6.2.1.9 Operating Page of the Control System, Operating Elements, Inner Area

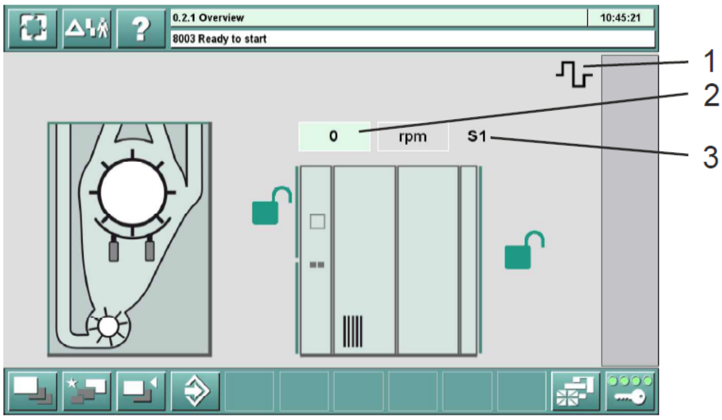

0.2.1 Overview
10:45:21
8003 Ready to start
0
rpm
S1
1
2
3

Figure 73: Operating page of the control system, inner area

Type of element: Operating page of the control system, operating elements, inner area

On the operating page of the controller the following settings can be made, for example:

Display State

- Communication to UNIcontrol 1
- Speed pin roller 2
- Assortment 3

6.2.1.10 Operating page of the control system, operating elements, footer

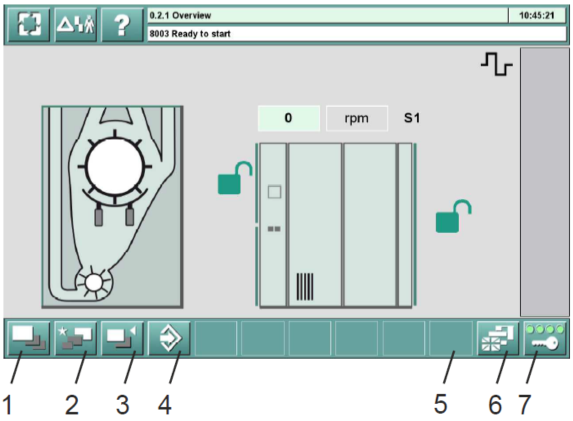

0.2.1 Overview
10:45:21
8003 Ready to start
0
rpm
S1
1
2
3
4
5
6
7

Figure 74: Operating page of the control system, footer

Type of element: Operating page of the control system, operating elements, footer

On the operating page of the controller the following settings can be made:

Display State

- Overview screen 1
- Login-dependent favourites 2
- Navigation to the first page 3
- Navigation to the menu 4
- Context-dependent, e.g. navigation to the next screen 5
- Context-dependent, e.g. change language 6
- Navigation to the login 7

6.2.1.11 Keyboard

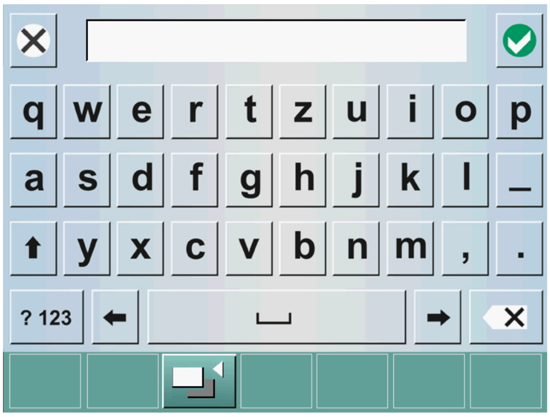


Figure 75: Keyboard

Type of element: Keyboard

The keyboard can be set to numbers or letters. Enter the numbers on the keyboard. Confirm the numbers. Enter the letters or the text on the keyboard. Confirm the letters or the text on the keyboard.

6.2.1.12 UNIcontrol controller

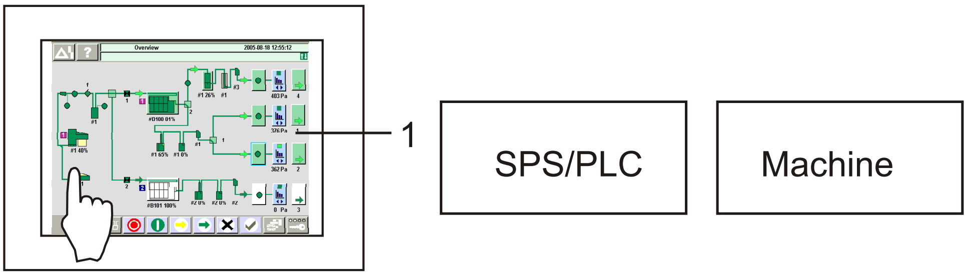


Figure 76: UNIcontrol controller

Type of element: UNIcontrol controller for blow-room machines 1

See UNIcontrol operating manual.

6.2.1.13 STATUS LED

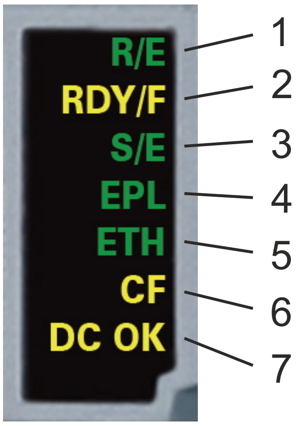


Figure 77: STATUS LED

Type of element: STATUS LED

Display elements on the control unit

Display State

1 R / E

Colour: Green, status: ON, application running

Colour Red, status: ON, SERVICE mode

2 RDY / F

Colour: Yellow, status: ON, SERVICE or BOOT mode.

Colour Red, status: ON, SERVICE mode.

3 S / E

Colour: Green/red, status: Error.

4 EPL

Colour: Green, status: ON, the link to the POWERLINK remote station is established.

Colour: Green, status: Flashes, the link to the POWERLINK remote station is established. The LED flashes if an Ethernet activity is present on the bus.

5 ETH

Colour: Green, status: ON, the link to the Ethernet remote station is established.

Colour: Green, status: Flashes, the link to the Ethernet remote station is established. The LED flashes if an Ethernet activity is present on the bus.

6 CF

Colour: Green, status: ON, CompactFlash inserted and detected.

Colour: Yellow, status: ON, write and read access to CompactFlash.

7 DC OK

Colour: Yellow, status: ON, CPU power supply OK.

Colour Red, status: ON, buffer battery empty.

6.2.1.14 T1000V frequency converter

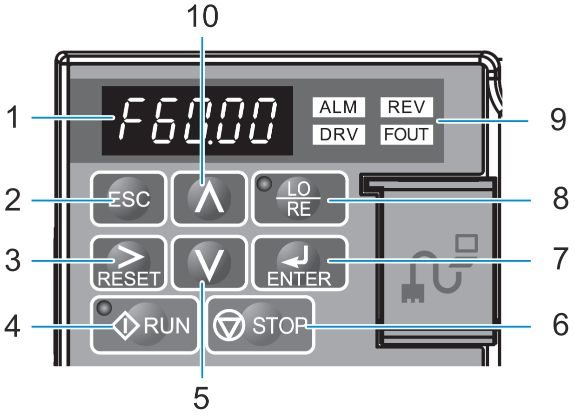


Figure 78: T1000V frequency converter

Type of element: T1000V frequency converter.

T1000V frequency converter.

Display State

1

Used for data display.

Indicates monitoring data, parameter numbers and settings.

2

ESC key

Returns to the previous menu.

3

RESET key

Moves the indicator to the right, acknowledges faults after they have been rectified.

4

RUN key

Starts the frequency converter operation, if the frequency converter is controlled via the operating unit (local mode).

RUN LED

Is illuminated when the motor is turning.

Flashes, at a speed decrease and when the reference value for the frequency is "0".

Flashes quickly when the drive is activated.

5

Down arrow

Used to move partial image down. Move cursor down. Reduce values.

6

STOP key

Used to stop frequency converter operation.

7

ENTER key

Confirmation and storage of set values or parameters.

8

LOCAL/REMOTE key

Used to switch between the control unit involving the operating unit (LOCAL) and the control terminals (REMOTE).

LO-RE LED

Is illuminated if the frequency converter is controlled via the digital operating unit (local mode).

9

ALM LED

Flashes, when the drive has Alarm status.

Flashes, when the drive has Error status.

REV LED

Flashes, when the drive is rotating in reverse.

Is not illuminated if the drive is rotating forward.

DRV LED

Is illuminated, when the drive is ready.

Is illuminated, when the drive is in one of the following modes: Verify, Setup, Parameter Setting, Auto.

FOUT LED

Is illuminated when the output frequency is displayed.

Is not illuminated when something other than the output frequency is being displayed.

10

Arrow up key

Used to move partial image up. Move cursor up. Increases values.

6.3 Overview of controls and display elements

6.3.1 Operating and display elements

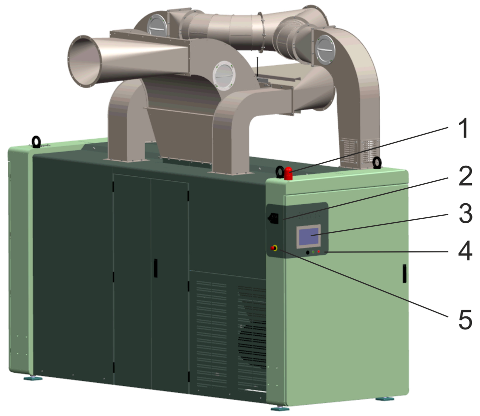


Figure 79: Operating and display elements

1 *Lamp ▸ 73*	*Operating page of the control system, operating elements, header ▸ 77*
3 *Panel ▸ 74*	*Operating page of the control system, operating elements, inner area ▸ 78*
4 *Buttons on the panel ▸ 74*	*Operating page of the control system, operating elements, footer ▸ 78*
5 *EMERGENCY STOP button ▸ 75*	*Keyboard ▸ 79*
2 *Main switch ▸ 75*	*UNIcontrol controller ▸ 79*
Safety switch with guard locking ▸ 76	*STATUS LED ▸ 80*
Lock roller key ▸ 76	*T1000V frequency converter ▸ 81*

6.4 Information on operating the machine

6.4.1 Structure of the Control Unit

1	2	3	4	A
1.1...1.x	2.1... 2.x	3.1 ... 3.x	4.1 ... 4.x	B

Figure 80: Structure of the control unit

The control unit is structured as follows:

Main menu A, submenu B

1 Information:

1.1 General information (machine information, frequency converter)

1.2 Information production (efficiency, actual values, drives, IO overview)

1.3 Protocols/statistics (alarms/warnings, event history, value changes logbook, event statistics)

2. Production settings:

2.1 Production

3. General settings:

3.1 General settings (date/time, language, machine set-up values, screen properties)

3.2 Configuration (network configuration, customer dates, machine data)

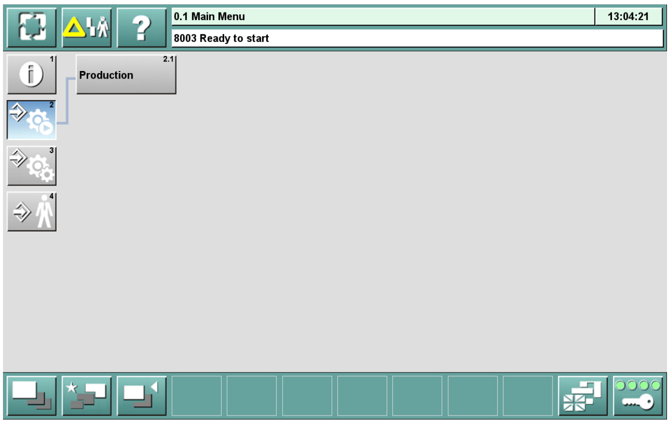
4. Service:

4.1 Maintenance (data export, data import)

4.2 Tests (input test, output test, lock roller, pin roller, electric travel cylinder, fan, door lock, endurance test)

4.3 Diagnostics (B+R system diagnostics)

6.4.2 Ready to Start



0.1 Main Menu 13:04:21

8003 Ready to start

Figure 81: Ready to start

Start the machine.

6.4.3 Switch to the Main Menu

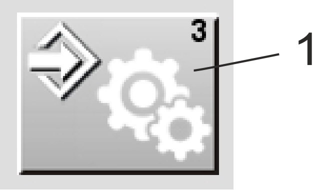


Figure 82: Switch to the main menu

1. Push the button Main Menu 1.

2. The Main Menu opens.

6.4.4 Main Menu

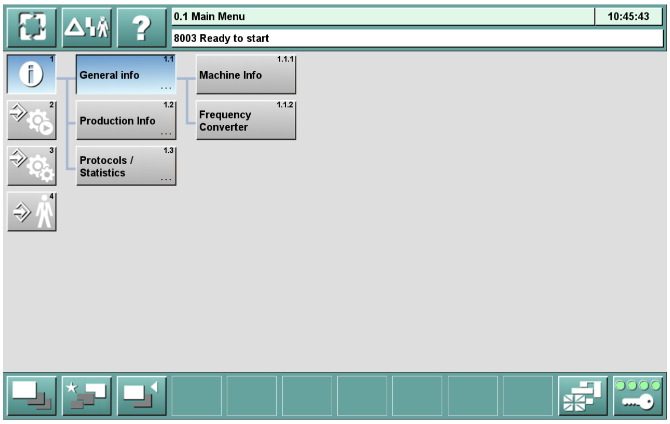

0.1 Main Menu
10:45:43
8003 Ready to start
1
2
3
4
1.1
General info
1.2
Production Info
1.3
Protocols / Statistics
1.1.1
Machine Info
1.1.2
Frequency Converter

Figure 83: Main menu

The main menu contains information on the operation of the machine.

6.4.5 Switch to Access

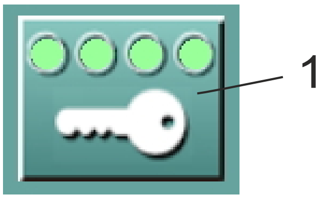


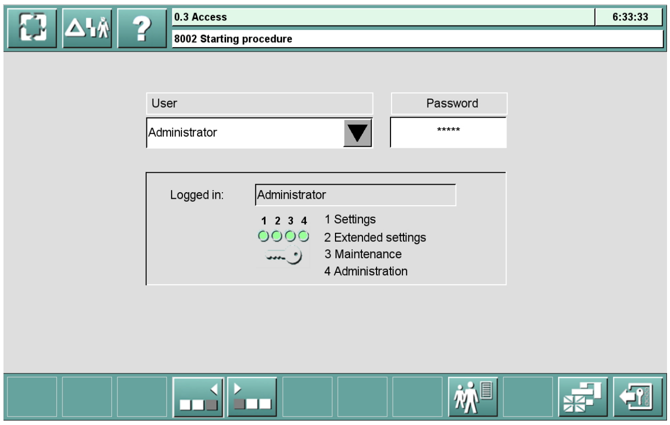
Figure 84: Switch to access

Push the button Access 1.

The Access data screen opens.

6.5 Settings before operation

6.5.1 Access



0.3 Access 6:33:33

8002 Starting procedure

User Password

Administrator *****

Logged in: Administrator

1 2 3 4

○○○○

1 Settings
2 Extended settings
3 Maintenance
4 Administration

Figure 85: Access

1. Select the user.
2. Enter the password. The password level appears.
3. Push the button user rights.

6.5.2 Switch to User Rights

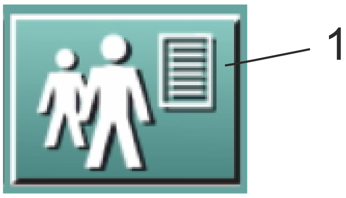
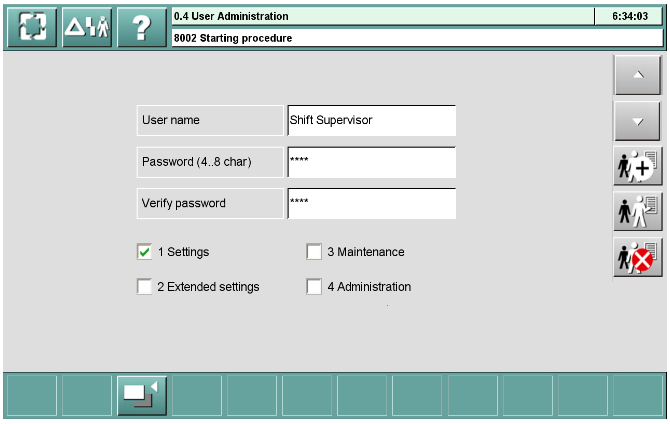


Figure 86: Switch to user rights

Push the button user rights 1.

The user rights data screen opens.

6.5.3 User Administration



0.4 User Administration 6:34:03
8002 Starting procedure

User name: Shift Supervisor
Password (4..8 char): ****
Verify password: ****

☑ 1 Settings
☐ 3 Maintenance
☐ 2 Extended settings
☐ 4 Administration

Figure 87: User administration

1. Set password authorization S4.
2. Create a new user.
3. Create a new password.
4. Determine the password authorization.

6.5.4 Switch to Edit User

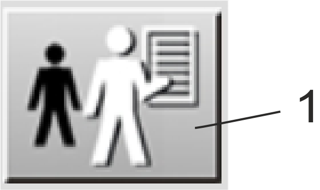
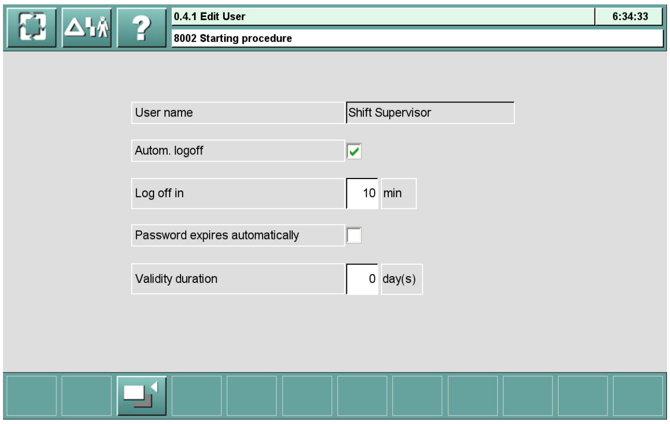


Figure 88: Switch to edit user

1. Push the button edit user 1.

Result The edit user data screen opens.

6.5.5 Edit User



0.4.1 Edit User 6:34:33
8002 Starting procedure

User name: Shift Supervisor
Autom. logoff: ☑
Log off in: 10 min
Password expires automatically: ☐
Validity duration: 0 day(s)

Figure 89: Edit user

1. Set the terms of use for the user.
2. Set the log off time.
3. Set the password expires automatically.
4. Set the validity period of the password.

6.5.6 Password Authorization

1
2
3
4

Figure 90: Password authorization

Select the password authorization:

Password authorization S1 1: Function: Basic operation, Read data

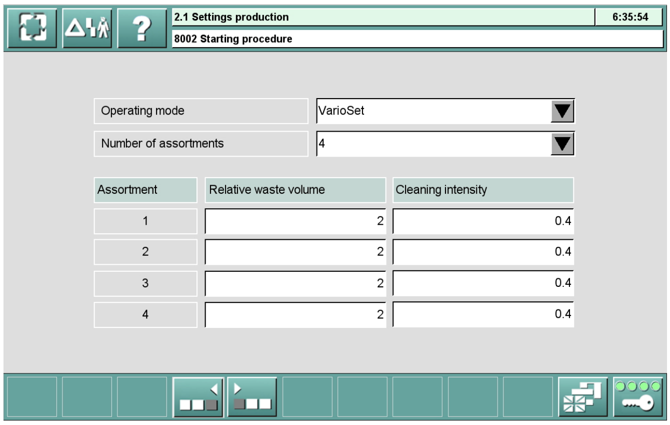
Password authorization S2 2: Function: Setting Advanced Settings, Machine and Production

Password authorization S3 3: Function: Service Operation, Import data

Password authorization S4 4: Function: User management

6.6 Operation

6.6.1 Settings Production 1



2.1 Settings production 6:35:54
8002 Starting procedure

Operating mode: VarioSet
Number of assortments: 4

Assortment	Relative waste volume	Cleaning intensity
1	2	0.4
2	2	0.4
3	2	0.4
4	2	0.4

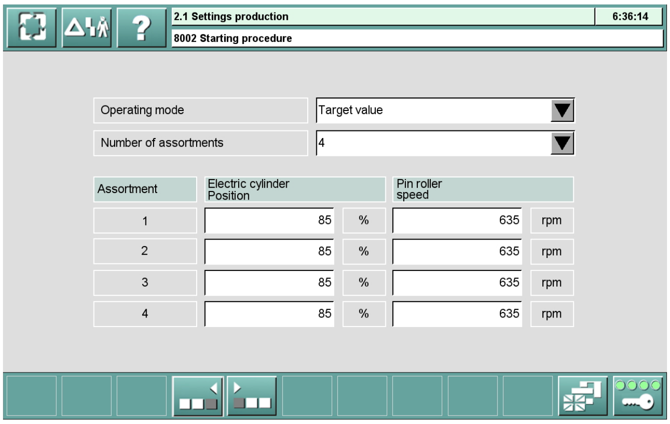
Figure 91: Settings production 1

Prerequisites Make sure that the criteria are obeyed:

- ✓ For changes, password authorization S2 is required.

1. The operating mode VarioSet and setpoint can be selected.
2. Set operating mode VarioSet. VarioSet is the standard operating mode.
3. Set the number of the assortments 1...4 here.
4. Set the relative waste volume 1...10 here.
5. Set the cleaning intensity 0...1.

6.6.2 Settings Production 2



2.1 Settings production 6:36:14
8002 Starting procedure

Operating mode: Target value
Number of assortments: 4

Assortment	Electric cylinder Position		Pin roller speed	
1	85	%	635	rpm
2	85	%	635	rpm
3	85	%	635	rpm
4	85	%	635	rpm

Figure 92: Settings production 2

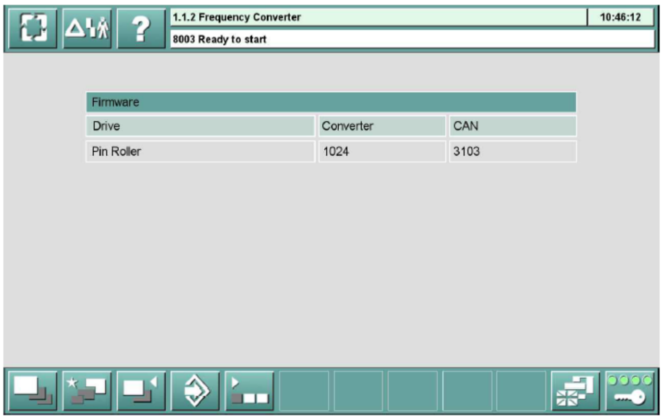
Prerequisites Make sure that the criteria are obeyed:

- ✓ For changes, password authorization S2 is required.

1. Select set point mode.

2. Set the number of the assortments 1...4 here.
3. Set the position of the electric cylinder with 1...100%. In this regard 1% is closed and 100% is open. The position of the electric cylinder causes the opening of the grate.
4. Set the speed at 480...960 rpm. In this regard a high speed of the pin roller causes high cleaning intensity

6.6.3 Frequency Converter



1.1.2 Frequency Converter 10:46:12

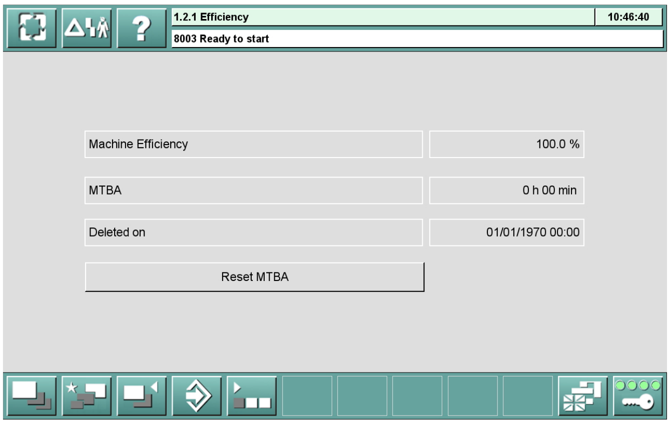
8003 Ready to start

Firmware		
Drive	Converter	CAN
Pin Roller	1024	3103

Figure 93: Frequency converter

The software version of the frequency converter and the CAN module are displayed.

6.6.4 Efficiency



1.2.1 Efficiency 10:46:40

8003 Ready to start

Machine Efficiency	100.0 %
MTBA	0 h 00 min
Deleted on	01/01/1970 00:00

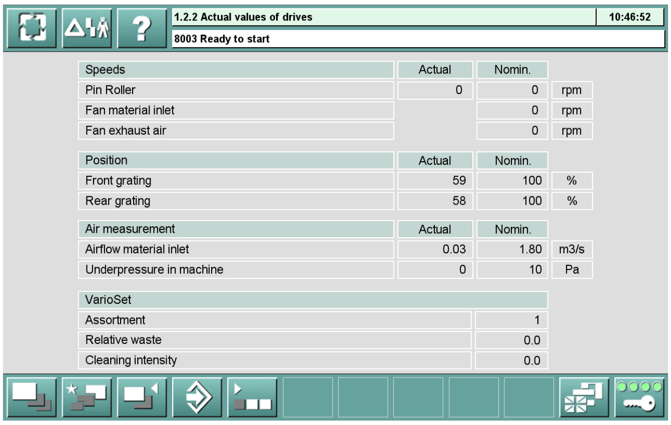
Figure 94: Efficiency

The efficiency of the machine is calculated.

The efficiency of the machine is the calculated efficiency of the last 2, 4 or 8 hours.

The MTBA value can be reset. (Mean time between help operations). The MTBA value indicates how long it will take for a malfunction to occur again. The MTBA value is calculated as an average.

6.6.5 Actual Values of Drives


1.2.2 Actual values of drives 10:46:52
8003 Ready to start

Speeds	Actual	Nomin.	
Pin Roller	0	0	rpm
Fan material inlet		0	rpm
Fan exhaust air		0	rpm

Position	Actual	Nomin.	
Front grating	59	100	%
Rear grating	58	100	%

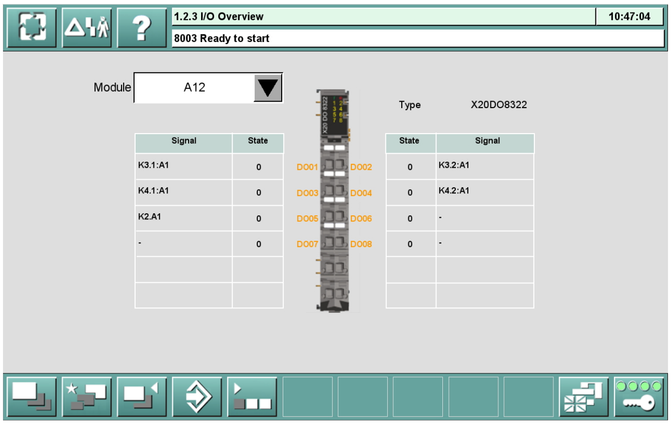
Air measurement	Actual	Nomin.	
Airflow material inlet	0.03	1.80	m3/s
Underpressure in machine	0	10	Pa

VarioSet	
Assortment	1
Relative waste	0.0
Cleaning intensity	0.0

Figure 95: Actual values of drives

The actual values and set points of the actuators, the active assortments and the VarioSet values are displayed.

6.6.6 I/O Overview


1.2.3 I/O Overview 10:47:04
8003 Ready to start

Module A12

Type X20DO8322

Signal	State			State	Signal
K3.1:A1	0	DO01	DO02	0	K3.2:A1
K4.1:A1	0	DO03	DO04	0	K4.2:A1
K2.A1	0	DO05	DO06	0	-
-	0	DO07	DO08	0	-

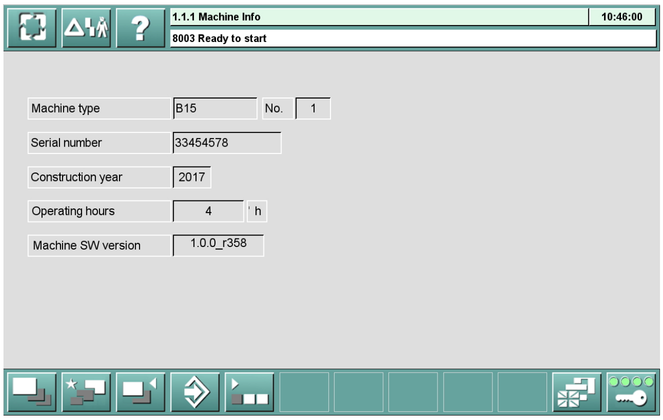
Figure 96: I/O overview

1. Select the I/O module.

Result The conditions of the I/O channels are displayed.

6.7 Settings during commissioning

6.7.1 Machine Info


1.1.1 Machine Info 10:46:00
8003 Ready to start

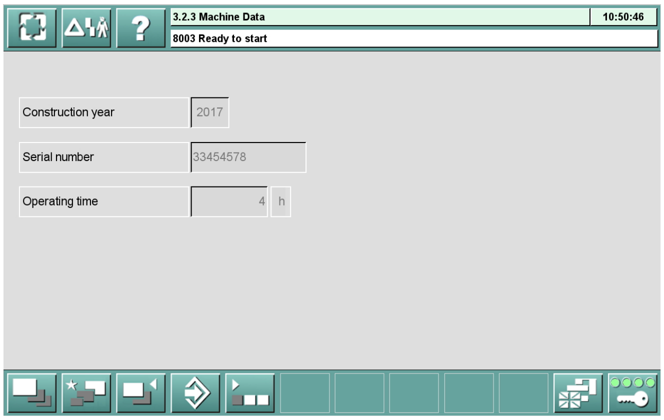
Machine type	B15	No.	1
Serial number	33454578		
Construction year	2017		
Operating hours	4	h	
Machine SW version	1.0.0_r358		

Figure 97: Machine info

The information about the machine is displayed.

The serial number and year of manufacture of the machine can be entered after a cold start or a software update.

6.7.2 Machine Data


3.2.3 Machine Data 10:50:46
8003 Ready to start

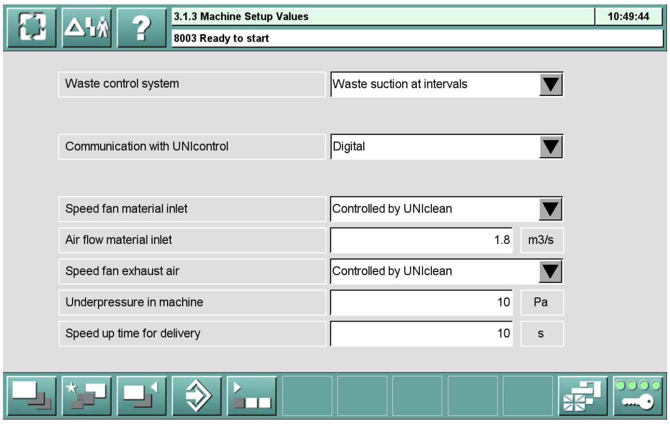
Construction year	2017	
Serial number	33454578	
Operating time	4	h

Figure 98: Machine data

The information concerning the Year of manufacture and the Serial number is preset in the factory.

The operating time increases with the operation of the machine.

6.7.3 Machine Setup Values



3.1.3 Machine Setup Values 10:49:44
8003 Ready to start

Waste control system	Waste suction at intervals	
Communication with UNIcontrol	Digital	
Speed fan material inlet	Controlled by UNIclean	
Air flow material inlet	1.8	m3/s
Speed fan exhaust air	Controlled by UNIclean	
Underpressure in machine	10	Pa
Speed up time for delivery	10	s

Figure 99: Machine setup values

– For changes, password authorization S2 is required.

Set the waste controller:

Permanent: The vacuum is always present. The lock roller is active according to the set interval.

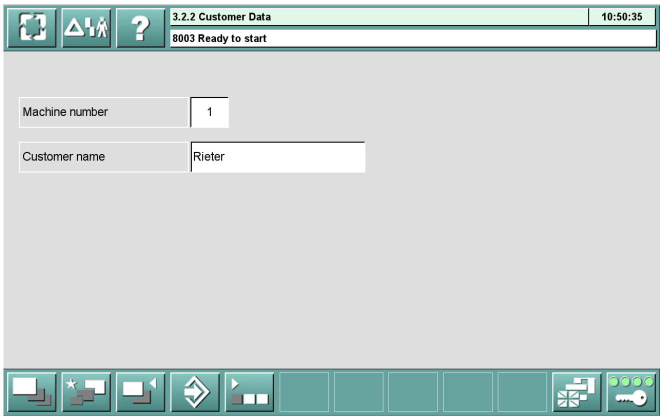
Interval: The lock roller is active at vacuum. Set the interval.

Manual: The lock roller rotates when the key is pushed next to the lock roller.

Deactivated: The lock roller is deactivated.

1. Set the communication with the UNIcontrol: Digital signals or Ethernet.
2. Set the delay of the warning during interruption of the Ethernet (TCP).

6.7.4 Customer Data



3.2.2 Customer Data 10:50:35
8003 Ready to start

Machine number	1
Customer name	Rieter

Figure 100: Customer data

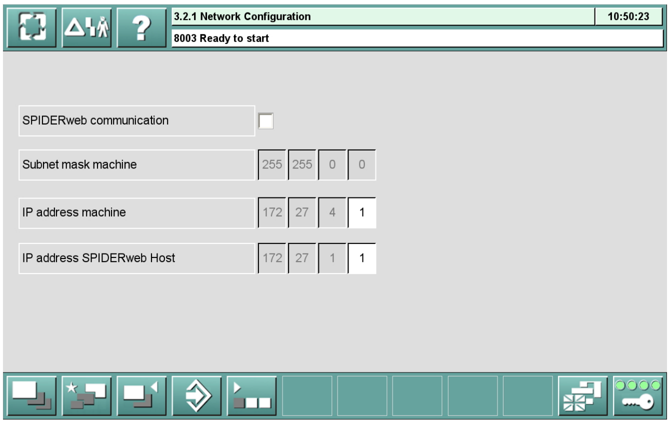
Prerequisites Make sure that the criteria are obeyed:

✓ For changes, password authorization S3 is required.

1. Enter the machine number of the line on the keyboard. Confirm the input.

2. Enter the customer name on the keyboard. Confirm the input.

6.7.5 Network Configuration



3.2.1 Network Configuration 10:50:23

8003 Ready to start

SPIDERweb communication ☐

Subnet mask machine 255 255 0 0

IP address machine 172 27 4 1

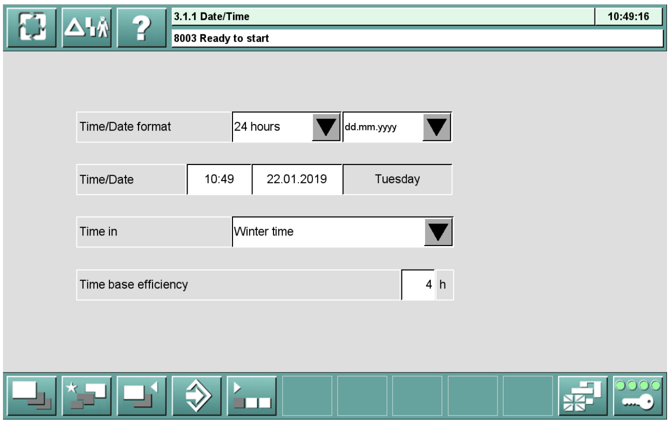
IP address SPIDERweb Host 172 27 1 1

Figure 101: Network configuration

– For changes, password authorization S3 is required.

Change the machine IP address. In this process, ensure that the IP address per network only appears once.

6.7.6 Date/Time



3.1.1 Date/Time 10:49:16

8003 Ready to start

Time/Date format 24 hours dd.mm.yyyy

Time/Date 10:49 22.01.2019 Tuesday

Time in Winter time

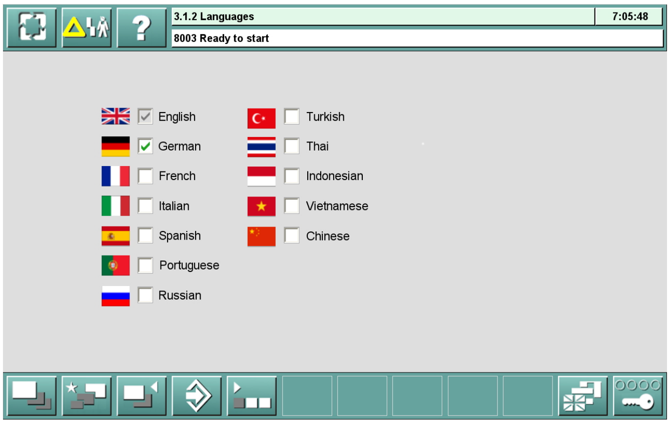
Time base efficiency 4 h

Figure 102: Date/Time

– For changes, password authorization S3 is required.

Set date and time.

6.7.7 Languages



3.1.2 Languages
7:05:48
8003 Ready to start

☑ English
☑ German
☐ French
☐ Italian
☐ Spanish
☐ Portuguese
☐ Russian
☐ Turkish
☐ Thai
☐ Indonesian
☐ Vietnamese
☐ Chinese

Figure 103: Languages

Select a display language.

A maximum of seven languages can be preset.

6.7.8 Switch to the Selected Language

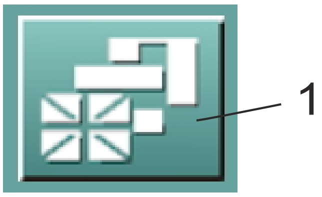
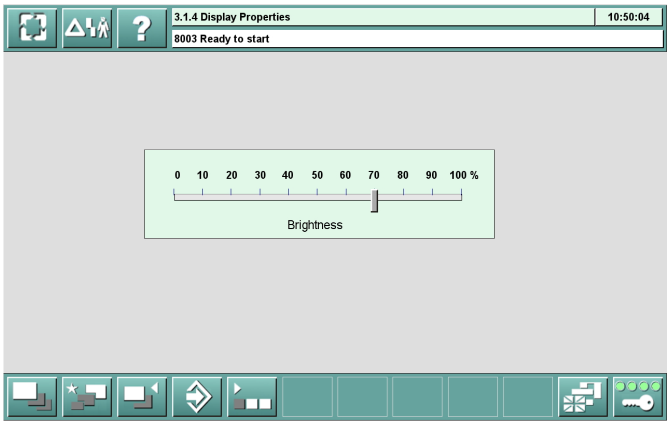


Figure 104: Switch to the selected language

Push the button language 1.

The selected language is set.

6.7.9 Display Properties



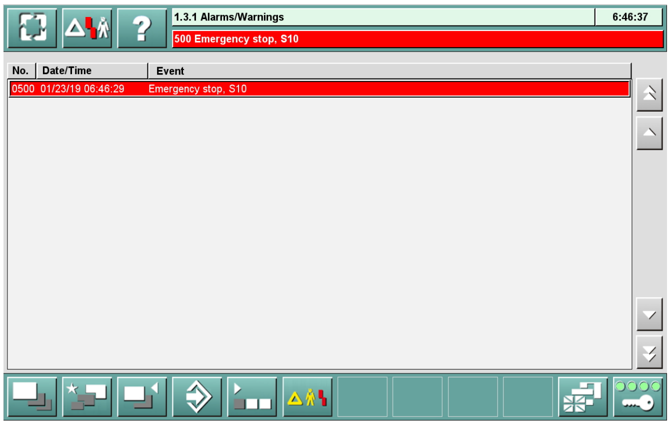
3.1.4 Display Properties
10:50:04
8003 Ready to start

Figure 105: Display properties

Set the brightness of the screen.

6.8 Protocols for operation

6.8.1 Alarms, Warnings



1.3.1 Alarms/Warnings 6:46:37

500 Emergency stop, S10

No.	Date/Time	Event
0500	01/23/19 06:46:29	Emergency stop, S10

Figure 106: Alarms, Warnings

Warnings and alarms are shown with number, time and description.

This is only an overview.

1. Filter the alarms.
2. Push the button.

6.8.2 Switch to Event History

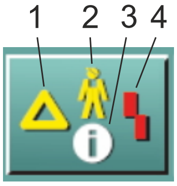
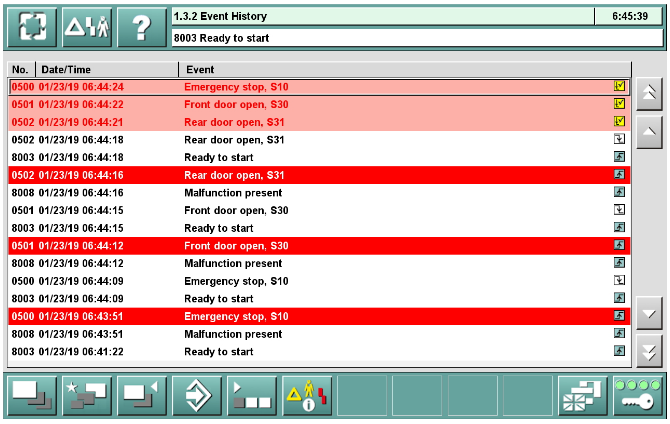


Figure 107: Switch to event history

Push the button.

The events can be filtered by warning 1, maintenance warning 2, report 3 and alarm 4.

6.8.3 Event History



1.3.2 Event History 6:45:39

8003 Ready to start

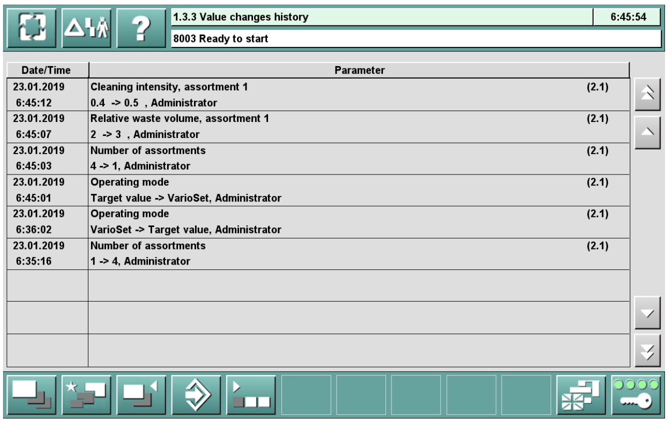
No.	Date/Time	Event
0500	01/23/19 06:44:24	Emergency stop, S10
0501	01/23/19 06:44:22	Front door open, S30
0502	01/23/19 06:44:21	Rear door open, S31
0502	01/23/19 06:44:18	Rear door open, S31
8003	01/23/19 06:44:18	Ready to start
0502	01/23/19 06:44:16	Rear door open, S31
8008	01/23/19 06:44:16	Malfunction present
0501	01/23/19 06:44:15	Front door open, S30
8003	01/23/19 06:44:15	Ready to start
0501	01/23/19 06:44:12	Front door open, S30
8008	01/23/19 06:44:12	Malfunction present
0500	01/23/19 06:44:09	Emergency stop, S10
8003	01/23/19 06:44:09	Ready to start
0500	01/23/19 06:43:51	Emergency stop, S10
8008	01/23/19 06:43:51	Malfunction present
8003	01/23/19 06:41:22	Ready to start

Figure 108: Event history

The history of the alarms is displayed.

The events can be filtered by warning, maintenance warning, signal or alarm.

6.8.4 Value Changes History



1.3.3 Value changes history 6:45:54

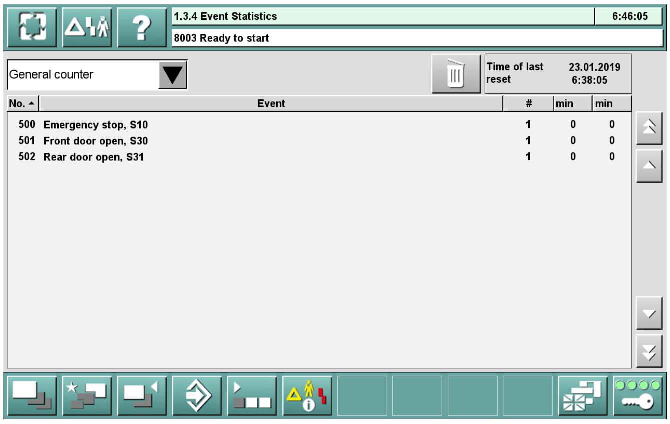
8003 Ready to start

Date/Time	Parameter	
23.01.2019 6:45:12	Cleaning intensity, assortment 1 0.4 -> 0.5 , Administrator	(2.1)
23.01.2019 6:45:07	Relative waste volume, assortment 1 2 -> 3 , Administrator	(2.1)
23.01.2019 6:45:03	Number of assortments 4 -> 1, Administrator	(2.1)
23.01.2019 6:45:01	Operating mode Target value -> VarioSet, Administrator	(2.1)
23.01.2019 6:36:02	Operating mode VarioSet -> Target value, Administrator	(2.1)
23.01.2019 6:35:16	Number of assortments 1 -> 4, Administrator	(2.1)

Figure 109: Value changes history

Relevant value changes history are displayed.

6.8.5 Event Statistics



1.3.4 Event Statistics 6:46:05

8003 Ready to start

General counter

Time of last reset 23.01.2019 6:38:05

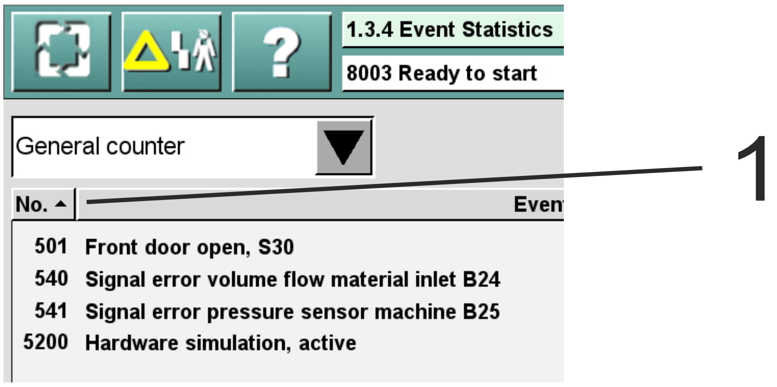
No. ▲	Event	#	min	min
500	Emergency stop, S10	1	0	0
501	Front door open, S30	1	0	0
502	Rear door open, S31	1	0	0

Figure 110: Event statistics

Past events can be filtered and sorted.

Past events can be deleted, displayed with a recycle bin. You can display when an event was deleted.

6.8.6 Switch to Numbering of Events



1.3.4 Event Statistics

8003 Ready to start

General counter

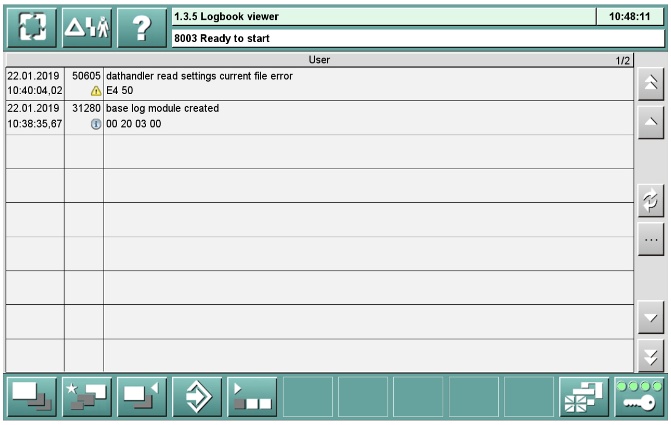
No. ▲	Even
501	Front door open, S30
540	Signal error volume flow material inlet B24
541	Signal error pressure sensor machine B25
5200	Hardware simulation, active

Figure 111: Switch to numbering of events

Push the button numbering of events 1.

Past events can be sorted.

6.8.7 Logbook Viewer



1.3.5 Logbook viewer 10:48:11

8003 Ready to start

User 1/2

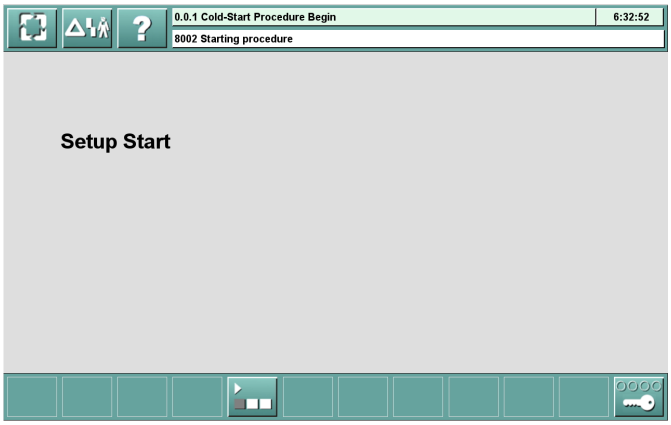
22.01.2019 10:40:04,02	50605 ⚠	dathandler read settings current file error E4 50
22.01.2019 10:38:35,67	31280 ⓘ	base log module created 00 20 03 00

Figure 112: Logbook viewer

See the event statistic.

6.9 Service

6.9.1 Cold-Start Procedure Begin



0.0.1 Cold-Start Procedure Begin 6:32:52

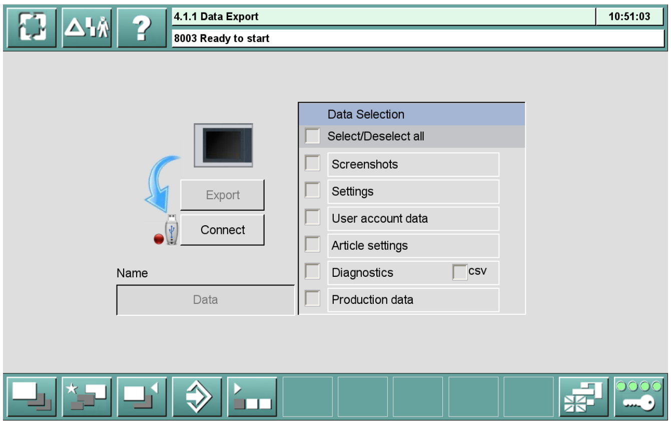
8002 Starting procedure

Setup Start

Figure 113: Cold-start procedure begin

After a cold start the screen Cold-start procedure is displayed.

6.9.2 Data Export



4.1.1 Data Export 10:51:03

8003 Ready to start

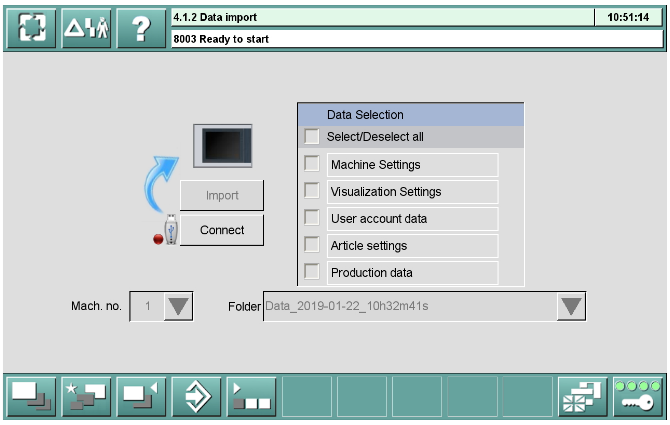
Data Selection
☐ Select/Deselect all
☐ Screenshots
☐ Settings
☐ User account data
☐ Article settings
☐ Diagnostics ☐ csv
☐ Production data
Export
Connect
Name
Data

Figure 114: Data export

1. Insert the USB stick.
2. Push the button connect.
3. Select the data to be exported.
4. With Export load the data to the USB stick.

6.9.3 Data Import

Data Import



4.1.2 Data import 10:51:14

8003 Ready to start

Mach. no. 1

Folder Data_2019-01-22_10h32m41s

Data Selection
☐ Select/Deselect all
☐ Machine Settings
☐ Visualization Settings
☐ User account data
☐ Article settings
☐ Production data
Import
Connect

Figure 115: Data import

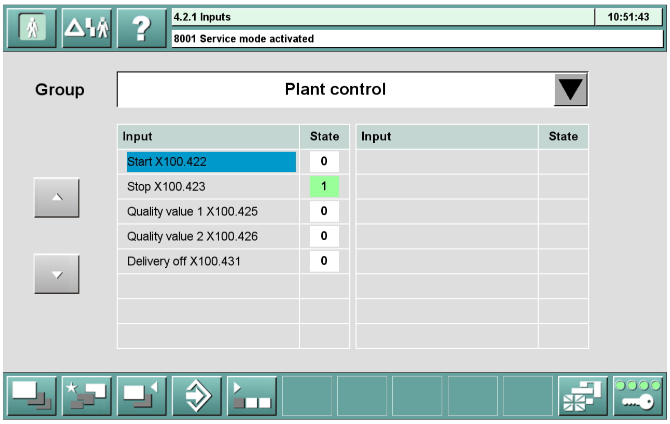
Prerequisites Make sure that the criteria are obeyed:

✓ Password authorization S3 is required.

1. Insert the USB stick. Push the button connect.
2. Select the data.
3. Use the Import button to load the data onto the machine. Wait until the data import has been completed.

6.9.4 Inputs

Inputs



4.2.1 Inputs 10:51:43
8001 Service mode activated

Group
Plant control

Input	State	Input	State
Start X100.422	0		
Stop X100.423	1		
Quality value 1 X100.425	0		
Quality value 2 X100.426	0		
Delivery off X100.431	0		

Figure 116: Inputs

Prerequisites Make sure that the criteria are obeyed:

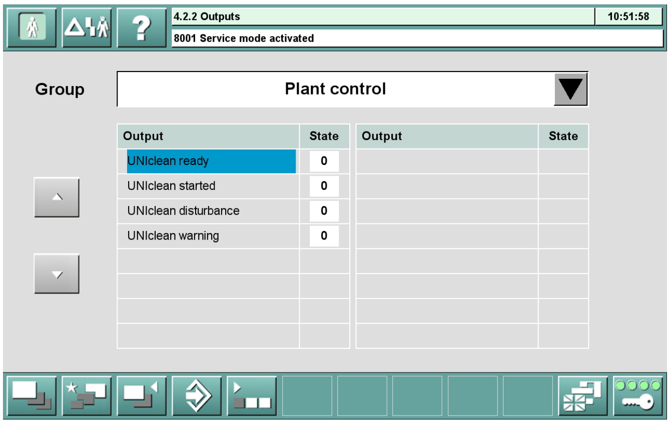
✓ Password authorization S3 is required.

1. Change the Operating mode with the button to the Service mode.
2. Select the inputs with the up and down arrow keys.
3. Select the groups with the drop down menu: Plant control, Malfunctions, Sensors, Miscellaneous.

Result The currently selected input value is displayed with the wide-beam lamp.

6.9.5 Outputs

Outputs



4.2.2 Outputs 10:51:58
8001 Service mode activated

Group
Plant control

Output	State	Output	State
UNIclean ready	0		
UNIclean started	0		
UNIclean disturbance	0		
UNIclean warning	0		

Figure 117: Outputs

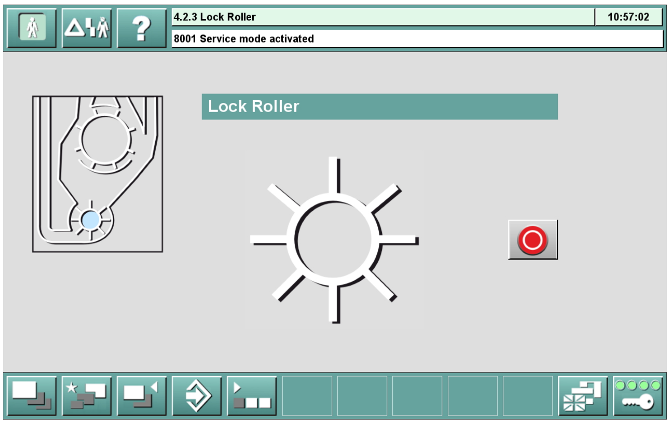
Prerequisites Make sure that the criteria are obeyed:

✓ Password authorization S3 is required.

1. Change the Operating mode with the button to the Service mode.

2. The outputs are divided by Plant control, Drives, Miscellaneous.
3. Switch OFF the motor protection switches of the pin roller Q1 and the lock roller Q2.
4. Set or reset the output value with the START or the STOP button.

6.9.6 Lock Roller



4.2.3 Lock Roller 10:57:02

8001 Service mode activated

Figure 118: Lock roller

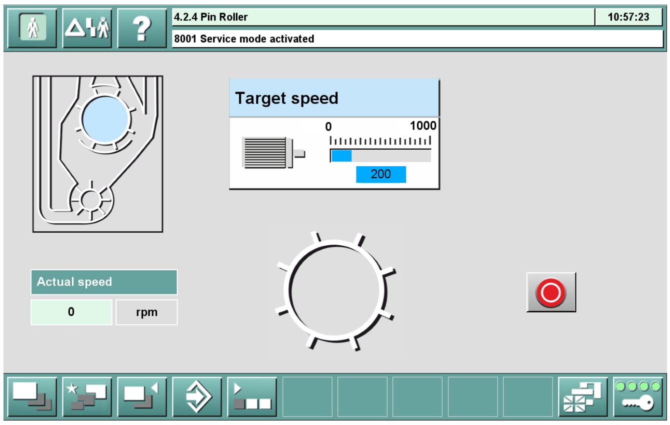
Prerequisites Make sure that the criteria are obeyed:

- ✓ Password authorization S3 is required.

1. Start the lock roller with the START key.
2. Stop the lock roller with the STOP key.

6.9.7 Pin Roller

Pin Roller



4.2.4 Pin Roller 10:57:23

8001 Service mode activated

Target speed 200

Actual speed 0 rpm

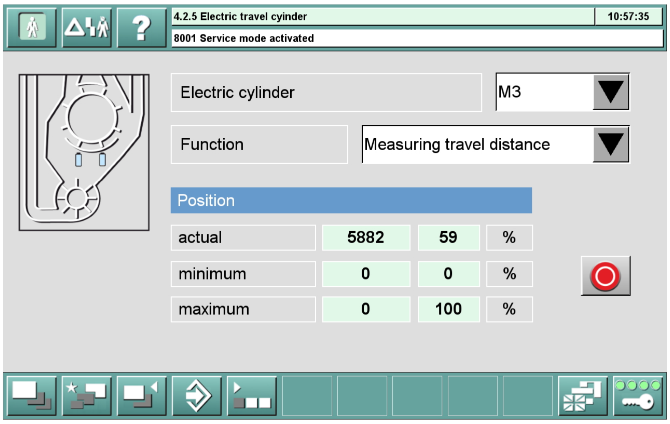
Figure 119: Pin roller

Prerequisites Make sure that the criteria are obeyed:

- ✓ Password authorization S3 is required.

1. Set the target speed with 200...1000 rpm.
2. Start the pin roller with the START key.
3. Stop the pin roller with the STOP key.

6.9.8 Electric Travel Cylinder



4.2.5 Electric travel cyinder 10:57:35
8001 Service mode activated

Electric cylinder: M3
Function: Measuring travel distance

Position			
actual	5882	59	%
minimum	0	0	%
maximum	0	100	%

Figure 120: Electric travel cylinder

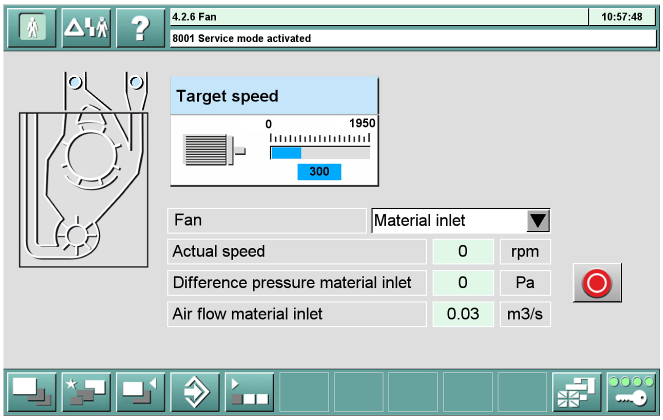
Prerequisites Make sure that the criteria are obeyed:

✓ Password authorization S3 is required.

1. Select the electric travel cylinder.
2. Select the appropriate function.
3. Start by pushing the START key.
4. Push the STOP key to stop.

6.9.9 Fan

Fan



4.2.6 Fan 10:57:48
8001 Service mode activated

Target speed: 300

Fan: Material inlet

Actual speed	0	rpm
Difference pressure material inlet	0	Pa
Air flow material inlet	0.03	m3/s

Figure 121: Fan

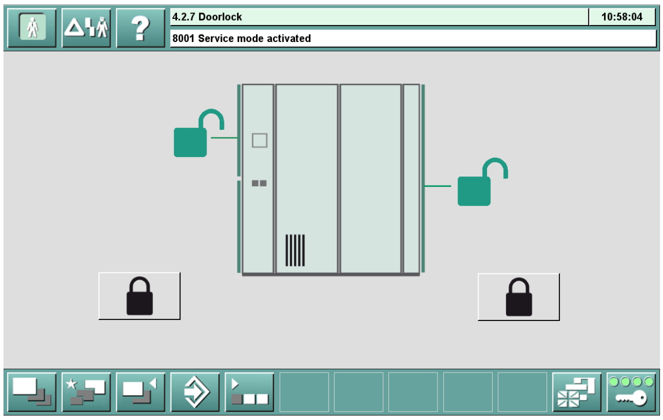
Prerequisites Make sure that the criteria are obeyed:

✓ Password authorization S3 is required.

1. Switch to the service mode.
2. Make a function test and a performance test for the fan.
3. Start the fan. Set the speed reference. Compare the performance and function of the fan components.
4. Read out the values.

In the drop down box fan the material inlet and the material outlet are selectable.

6.9.10 Testing the Doorlock



4.2.7 Doorlock 10:58:04

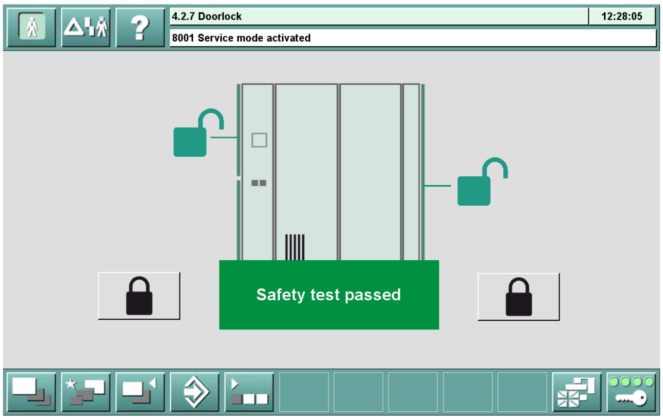
8001 Service mode activated

Figure 122: Testing the doorlock

1. Set password authorization S3.
2. Switch to service mode.
3. Switch to data screen 4.2.7 Doorlock.
4. Push the START key.

Result Test passed or test failed is displayed.

6.9.11 Doorlock Safety Test Passed



4.2.7 Doorlock 12:28:05

8001 Service mode activated

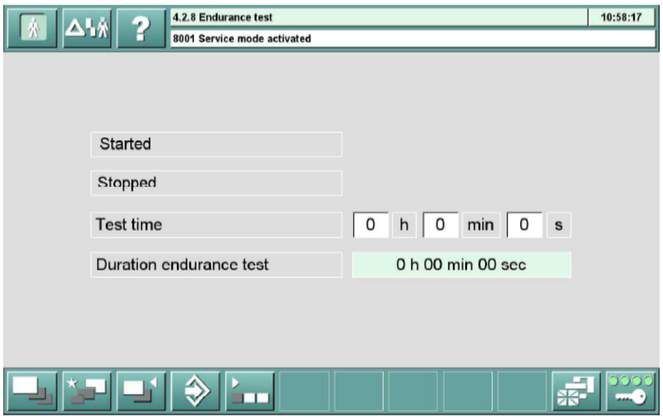
Safety test passed

Figure 123: Doorlock safety test passed

1. To display, password authorization S3 is required.
2. Lock or unlock the doors via the buttons.

The push up menu indicates that the safety test for the door tumbler has been passed.

6.9.12 Endurance Test



4.2.8 Endurance test 10:58:17

8001 Service mode activated

Started

Stopped

Test time 0 h 0 min 0 s

Duration endurance test 0 h 00 min 00 sec

Figure 124: Endurance test

Prerequisites Make sure that the criteria are obeyed:

✓ To display, password authorization S3 is required

1. Start the continuous test by pushing the START key.
2. Stop the continuous test be pushing the STOP key.
3. Set the test time, if the test should run for a specific time. The test runs until the STOP key is pushed, an error occurs or the test time has elapsed.

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7 Commissioning

This chapter contains the information about the commissioning of the machine. Only Rieter technicians or Rieter-approved technicians are permitted to do the commissioning of the machine.

7.1 Commissioning Personnel

Only Rieter personnel or Rieter approved personnel are permitted to commission the machine at customer’s location.

7.2 Commissioning

Machines manufactured by Rieter Machine Works Ltd. must always be assembled and commissioned by Rieter's own staff.

Should the assembly of new or existing plant be carried out by a third party, however, Rieter Machine Works Ltd. declines all liability.

7.3 Putting Back into Operation

All elements affecting safety must be tested to ensure that they are in perfect operating condition.

The machine-specific regulations with regard to re-commissioning must be observed.

The regulations and operating procedures specific to the machine are listed in the Chapter "Recommissioning" in Part 3. These regulations, and particularly the safety regulations, must be adhered to most exactly.

7.4 Machine set up; Optimise Settings

7.4.1 Optimising the Waste Quantity

7.4.1.1 Grating

1. Adjust the grate to the material.*Production settings ▸ 108*
2. Replace worn grating bars.

   Remove grating bars ▸ 160

   Installing the grating bars ▸ 160
3. Replace defective electric cylinder for the grate adjustment element. Adjusting the electric cylinder.

   Electric cylinder for the grating setting ▸ 161

7.4.2 Measurements

7.4.2.1 Waste Measurement

Waste measurement with filter box*Draw off waste with separate filter box* ▸ *128*

Manual waste measurement
Determining the waste volume ▸ *129*

7.4.2.2 Dust Volume

Determining the waste volume

7.4.3 Controller B+R

7.4.3.1 Setting Ethernet Aaddress

1. Setting the IP address

Setting the IP address ▸ *110*

7.4.3.2 Change the Battery

1. Change the battery

Change the battery ▸ *110*

7.4.3.3 Perform a Cold Start

1. Perform a cold start

Cold start with reset button on CPU/battery ▸ *61*

7.4.4 Put the Machine into Operation

7.4.4.1 Put the Machine into Operation

Check the function of the safety relevant components.

7.5 Cleaning Point

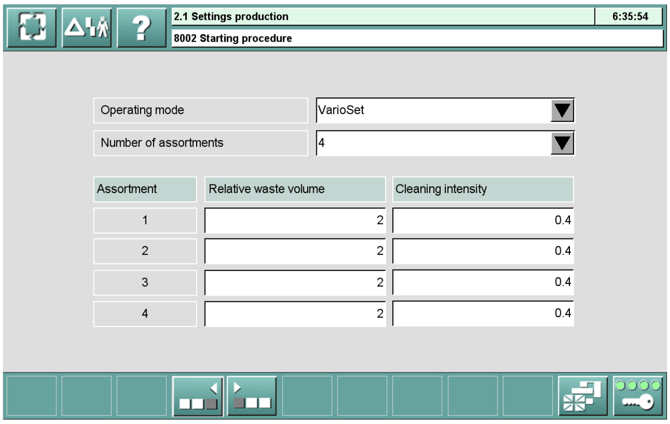
7.5.1 Grid

7.5.1.1 Grid Adjustment

7.5.1.2 Production Settings

Optimising the Waste Quantity ▸ *107*

Grid Adjustment ▸ 108



2.1 Settings production 6:35:54
8002 Starting procedure

Operating mode: VarioSet
Number of assortments: 4

Assortment	Relative waste volume	Cleaning intensity
1	2	0.4
2	2	0.4
3	2	0.4
4	2	0.4

Figure 125: Production settings

VarioSet

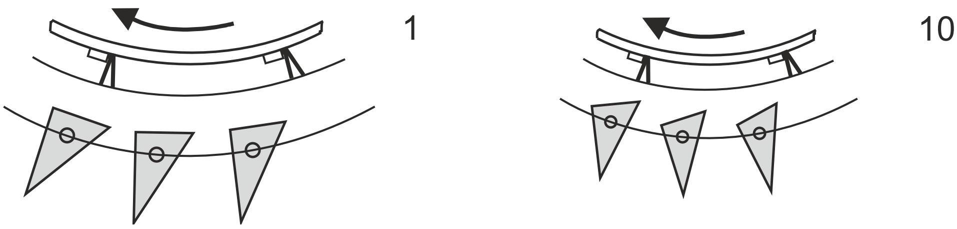


Figure 126: VarioSet

VarioSet is the default setting for production.

1. Set the relative waste volume **1**, **10**.

Relative Waste Volume (Grating Setting)

Relative waste volume low	1.0 on scale
Relative waste volume high	10 on scale

1. At read-out, set a dark waste with few good fibres.

Cleaning Intensity (Speed of the Cylinder)

Speed low 0.0	min. 450 rpm
Speed high 1.0	max. 960 rpm

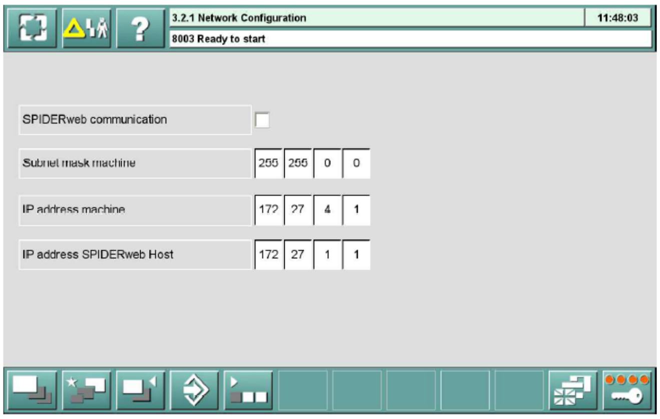
7.6 Control Technique

7.6.1 Basic Module of the Control System

7.6.1.1 Ethernet Interface 3IF of the Control System

7.6.1.2 Setting the IP Address

Setting the IP Address



3.2.1 Network Configuration 11:48:03
8003 Ready to start

SPIDERweb communication ☐
Subnet mask machine 255 255 0 0
IP address machine 172 27 4 1
IP address SPIDERweb Host 172 27 1 1

Figure 127: Setting the IP address

1. On the operating side 3.2.1, set the network configuration under Machines –IP address. In this process ensure that only one IP address exists per network.
2. If a UNIcontrol network plan is present, then set the IP address for the network.

7.6.1.3 Change the Battery

Controller B+R ▸ *108*

Change the battery

1. Change the battery*Change battery of control system* ▸ *162*

8 Operation

This chapter contains the information about the operation of the machine. This chapter contains the information about how to change the technology components.

8.1 General Information

Only approved personnel are permitted to operate the machine.

This chapter contains the information about how to:

- Use the operating elements.
- Monitor the machine during the production.
- Prevent faults because of the operators maintenance.
- Correct faults in the material flow.
- Operate all data screens.

Before the machine is operated, make sure that:

- The machine is ready for the operation.
- All doors and all covers are closed.
- The emergency stop button is unlocked.
- The main switch is set to the position ON.
- No fault message and no warning message are shown on the screen.

8.2 Switching on the Machine

8.2.1 Setting the Main Switch

Setting the Main Switch

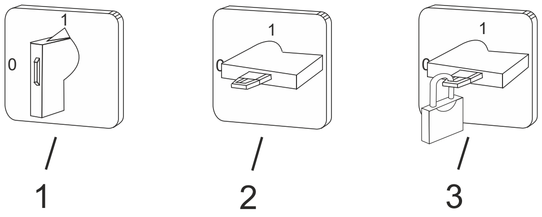


Figure 128: Setting the main switch

1. Switch on the main switch 1. In position is 1 the machine ready to start.
2. Switch off the main switch 2. In position 0 the machine is de-energised. The machine cannot be started.
3. Secure the main switch with a lock 3.

8.2.2 Operating the EMERGENCY STOP button

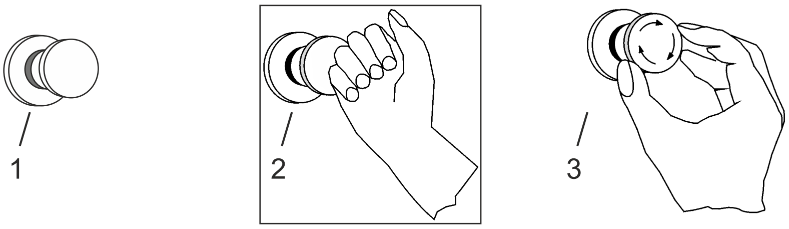


Figure 129: Operating the EMERGENCY STOP button

1. To stop the machine in an emergency, trigger the EMERGENCY STOP button 1.
2. Strike the EMERGENCY STOP button 2.

   ⇨ The drives will be stopped.

Prerequisites Make sure that the criteria are obeyed:

✓ The machine cannot be started, as long as the EMERGENCY STOP button is actuated.

1. Reset the EMERGENCY STOP button 3 by rotating the EMERGENCY STOP button.

Result The machine can be started.

8.3 Automatically Testing Components of the Safety Circuit

8.3.1 Testing the Safety Circuit

Use the following method to test the safety circuit:

Prerequisites Make sure that the criteria are obeyed:

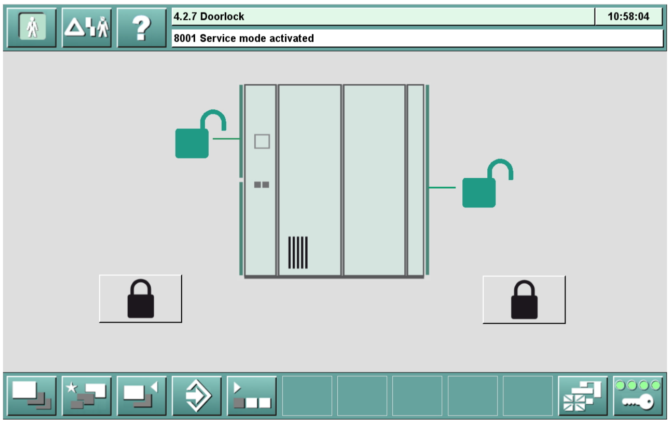
✓ The safety test of the machine is executed at each switch-on (main switch on) and when starting the machine. The test must be passed without error.

1. Replacement of a component in the safety circuit: Components of the safety circuit must only be replaced when the main switch (Power OFF) is switched OFF. Components in the safety circuit must always be replaced in their entirety.
2. After every warm start (main switch on) or a cold start the safety circuit is always tested automatically. The machine can only be started up again only when all components function.
3. In service mode on the operating page 4.2.7 Door guard locking the safety test is started manually with the Start button.

Safety components are listed under Safety device in the electrical circuit diagram.

A table for entering the safety test is provided in the electrical circuit diagram.

8.3.2 Testing the Doorlock

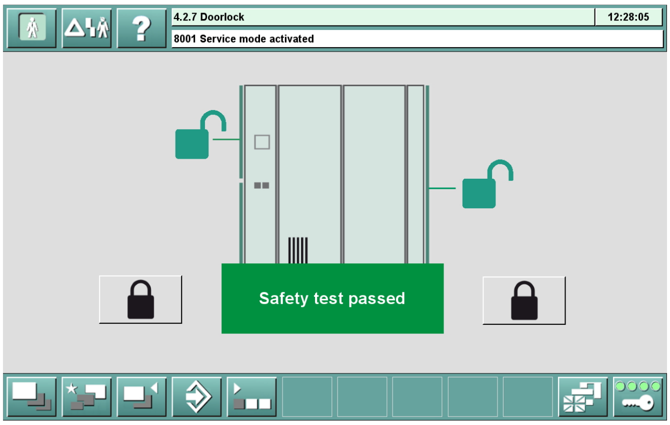


4.2.7 Doorlock 10:58:04
8001 Service mode activated

Figure 130: Testing the doorlock

1. Set password authorization S3.
2. Switch to service mode.
3. Switch to data screen 4.2.7 Doorlock.
4. Push the START key.
5. Test passed or test failed is displayed.

8.3.3 Door Locking Test Passed



4.2.7 Doorlock 12:28:05
8001 Service mode activated

Safety test passed

Figure 131: Door locking test passed

Door locking test passed is displayed.

8.4 Mechanically Testing Components of the Safety Circuit

8.4.1 Testing the Function of the Main Switch

Testing the function of the main switch

1. After repair, mechanically test the function of the main switch as follows:
2. Switch on the machine with the main switch. The machine starts.

8.4.2 Testing the Function of the EMERGENCY STOP Button

Testing the EMERGENCY STOP buttons

1. Mechanically test the function of the EMERGENCY STOP buttons after maintenance as follows:
2. Activate the EMERGENCY STOP button. This can also be executed when the machine is at a standstill.
3. Check the fault on the machine panel. Reset the EMERGENCY STOP button. Acknowledge the fault on the machine panel.

Result The machine is ready for operation.

8.5 Safety Devices on the Machine

8.5.1 Opening the Flap on the Lock Roller

Opening the Flap on the Lock Roller

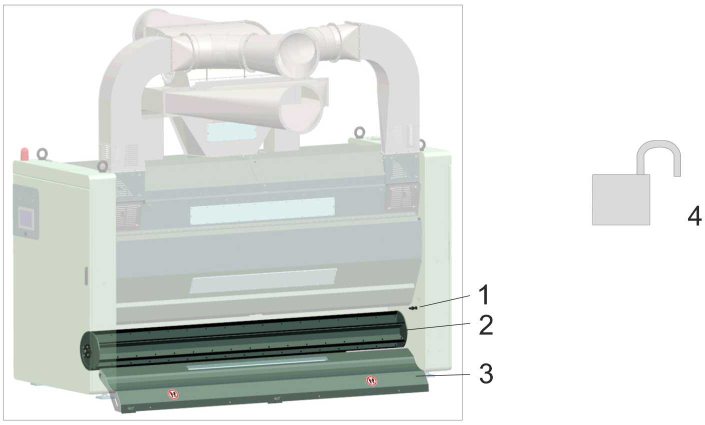


Figure 132: Opening the flap on the lock roller

Set the main switch to the OFF position and secure with a lock.

The lever to operate the locking pin 1 is on the right-hand side of the machine on the rear wall of the inside of the right door.

The flap 3 on the lock roller 2 can only be opened, if the locking pin was drawn. The side doors open only when everything is at a standstill.

1. Switch off the material supply and the fans at the central blowroom controller. This prevents the waste being sucked onto the grating.
2. Switch off the machine. Wait until the cylinder has come to a standstill.
3. Activate the EMERGENCY STOP button. Wait until the symbol "Door unlocked” 4 appears in the data screen.
4. Open door.
5. Loosen the fasteners.
6. Pull the locking pin.
7. Open the flap.

The safety circuit prevents the machine from starting when a flap is open.

1. Pull the locking pin. Close the flap.

8.5.2 Manually Opening the Doors in De-energised Status

In the event of a power failure or during commissioning, if there is no power supply, proceed as follows:

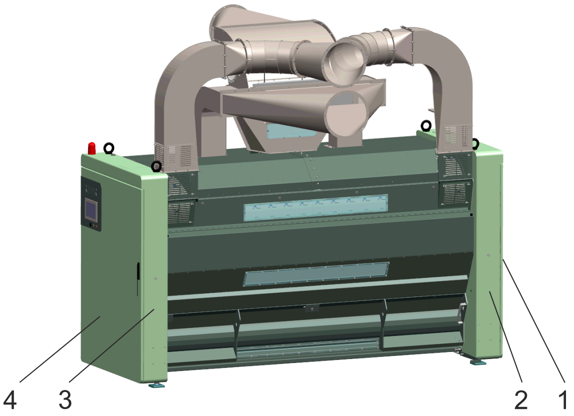


Figure 133: Manually opening the doors in de-energised status

1. Through the view window, check to ensure that the pin roller is at a standstill.
2. Only open the locking mechanism on the doors 1, 4, when the pin roller is at a complete standstill.
3. Remove the plugs on the holes 2, 3 in the doors.

8.5.3 Opening Doors when Power is Available (Door Lock)

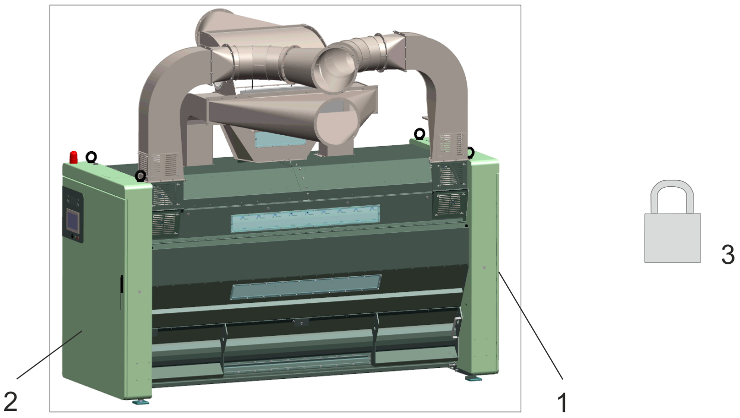


Figure 134: Opening doors when power is available

As long as the symbol 3 appears on the display of the control unit, the doors are locked when the main switch is switched on.

The doors 1, 2 are secured with safety switches equipped with guard locking.

The door can only be opened when the pin roller is at a standstill.

The doors can be opened in a de-energised state. See description of emergency release safety switch.

8.6 Electronic Documentation (e-DOC)

8.6.1 Navigating through the e-DOC (Electronic Documentation) program

Finding Information on the Contents of e-DOC

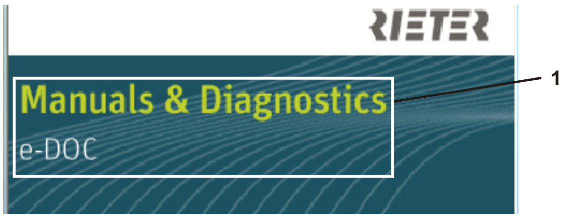


Figure 135: Navigating through the e-DOC (electronic documentation) program

Information on the contents of e-DOC can be found in “Manuals and diagnostics” 1

The e-DOC program contains the following technical documents relevant to the machine: Operating manual, troubleshooting information, spare parts catalogue and spare parts ordering information, operating manuals in PDF format, spare parts catalogues and electrical documentation, marketing information, training information and forms.

The following actions are possible:

1. Ordering of spare parts.
2. Retrieval of information on the fitting and removal of spare parts.
3. Retrieval of information on rectifying faults.
4. Search for technical terms.

8.6.2 Opening e-DOC

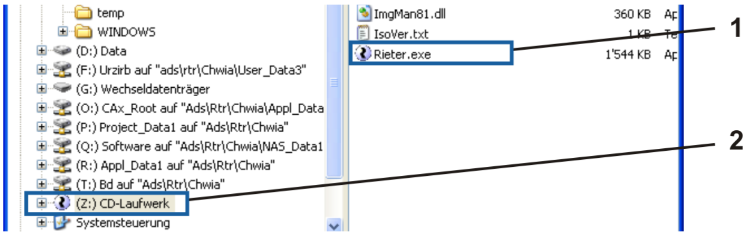
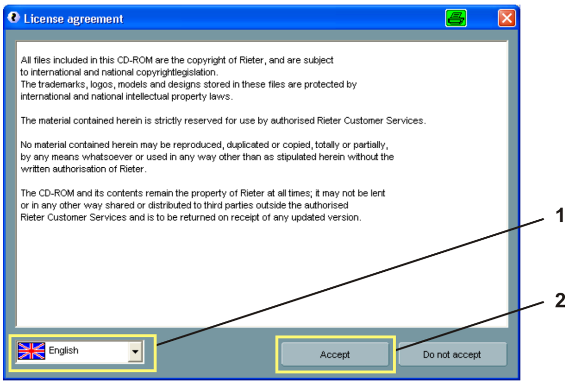

temp
WINDOWS
(D:) Data
(F:) Urzirb auf "ads\rtr\Chwia\User_Data3"
(G:) Wechseldatenträger
(O:) CAx_Root auf "Ads\Rtr\Chwia\Appl_Data
(P:) Project_Data1 auf "Ads\Rtr\Chwia"
(Q:) Software auf "Ads\Rtr\Chwia\NAS_Data1
(R:) Appl_Data1 auf "Ads\Rtr\Chwia"
(T:) Bd auf "Ads\Rtr\Chwia"
(Z:) CD-Laufwerk
Systemsteuerung
ImgMan81.dll
360 KB
IsoVer.txt
1 KB
Rieter.exe
1'544 KB
1
2

Figure 136: Opening e-DOC

1. Select the appropriate drive 2 and open e-DOC 1.

The relevant (country-dependent) WINDOWS operating system has to be used to open the e-DOC program, so that the lines are displayed correctly.

8.6.3 Selecting the Language and Accepting the License Agreement


License agreement
English
Accept
Do not accept
1
2

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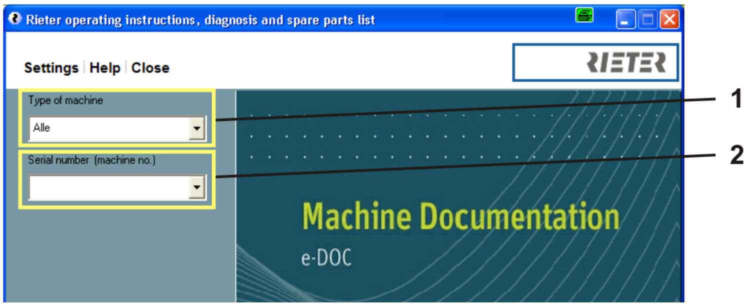
Rieter Customer Services and is to be returned on receipt of any updated version.

Figure 137: Selecting the language and accepting the licence agreement

1. Select the language for the e-DOC program 1.
2. Read and accept the license agreement 2.

8.6.4 Opening the Home Page


Rieter operating instructions, diagnosis and spare parts list
Settings | Help | Close
RIETER
Machine Documentation
e-DOC
1
2

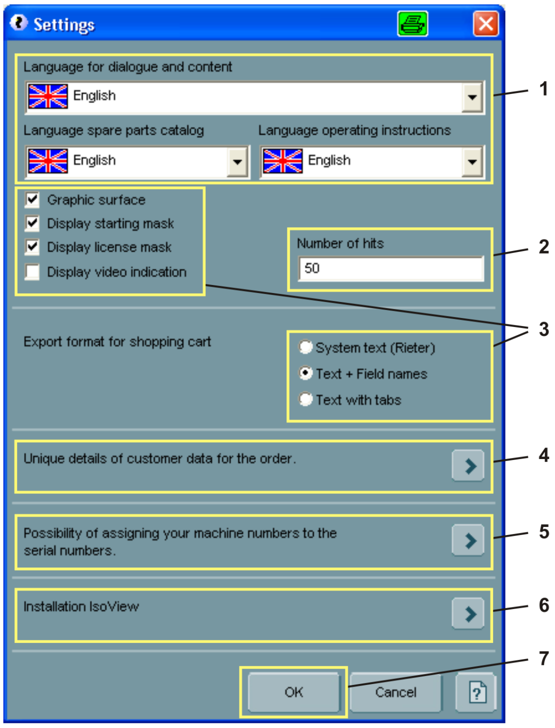
Type of machine: Alle

Serial number (machine no.):

Figure 138: Opening the home page

1. Select the machine type **1** and the machine number **2**.

8.6.5 Opening the “Settings” Menu and Entering Data


Settings
Unique details of customer data for the order.
Possibility of assigning your machine numbers to the serial numbers.
Installation IsoView
OK
Cancel
1
2
3
4
5
6
7

Language for dialogue and content: English

Language spare parts catalog: English

Language operating instructions: English

☑ Graphic surface
☑ Display starting mask
☑ Display license mask
☐ Display video indication

Number of hits: 50

Export format for shopping cart:
○ System text (Rieter)
● Text + Field names
○ Text with tabs

Figure 139: Opening the “Settings” menu and entering data

1. Select the languages for dialogue and content, the spare parts catalogue and the operating manual **1**.
2. Select a limit for the number of search results **2**.
3. Make modifications to the output display format **3**.
4. Enter customer data for orders **4**.
5. Match machine data **5**.
6. Install the ISOView program **6**.

7. Click on OK to confirm the settings 7.

8.6.6 Entering Ordering Address

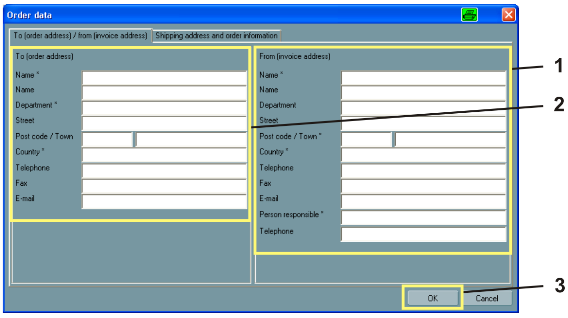

Order data
To (order address) / from (invoice address)
Shipping address and order information
To (order address)
Name *
Name
Department *
Street
Post code / Town
Country *
Telephone
Fax
E-mail
From (invoice address)
Name *
Name
Department
Street
Post code / Town *
Country *
Telephone
Fax
E-mail
Person responsible *
Telephone
OK
Cancel
1
2
3

Figure 140: Entering ordering address

1. Enter ordering address 1 and billing address 2.
2. Click on OK to confirm the data 3.

8.6.7 Entering Recipient's Address

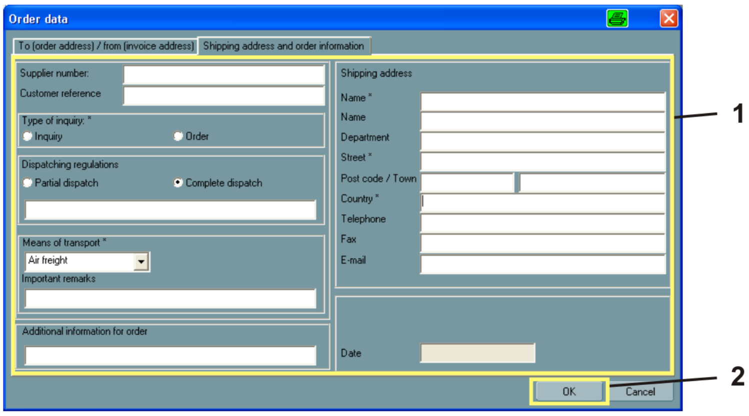
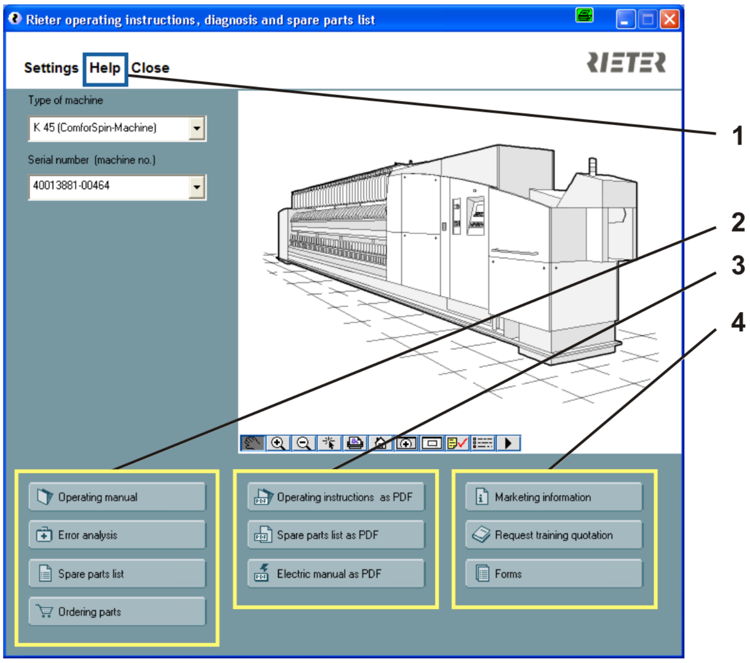

Order data
To (order address) / from (invoice address)
Shipping address and order information
Supplier number
Customer reference
Type of inquiry: *
○ Inquiry
○ Order
Dispatching regulations
○ Partial dispatch
● Complete dispatch
Means of transport *
Air freight
Important remarks
Additional information for order
Shipping address
Name *
Name
Department
Street *
Post code / Town
Country *
Telephone
Fax
E-mail
Date
OK
Cancel
1
2

Figure 141: Entering recipient's address

1. Enter the recipient's address, the supplier number and further order-related details 1.
2. Click on OK to confirm the data 2.

8.6.8 Opening the e-DOC Overview Screen


Rieter operating instructions, diagnosis and spare parts list
Settings
Help
Close
RIETER
Operating manual
Error analysis
Spare parts list
Ordering parts
Operating instructions as PDF
Spare parts list as PDF
Electric manual as PDF
Marketing information
Request training quotation
Forms
1
2
3
4

Type of machine: K 45 (ComforSpin-Machine)

Serial number (machine no.): 40013881-00464

Figure 142: Opening the e-DOC overview screen

1. Open the “Help” menu, if required, to bring up a description of the current page 1
2. Select the required technical document 2 (operating manual, troubleshooting information, spare parts catalogue, spare parts ordering information)
3. Select the required technical document in PDF format 3 (operating manual, spare parts catalogue, electrical documentation)
4. Select information 4 on marketing and training, and select forms

8.6.9 Opening the Spare Parts Catalogue

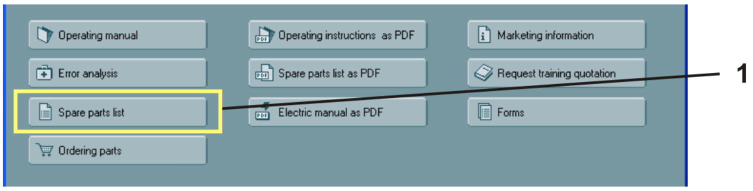

Operating manual
Error analysis
Spare parts list
Ordering parts
Operating instructions as PDF
Spare parts list as PDF
Electric manual as PDF
Marketing information
Request training quotation
Forms
1

Figure 143: Opening the spare parts catalogue 1

1. Click on the appropriate button to open the spare parts catalogue 1.

8.6.10 Navigating through the Spare Parts Catalogue

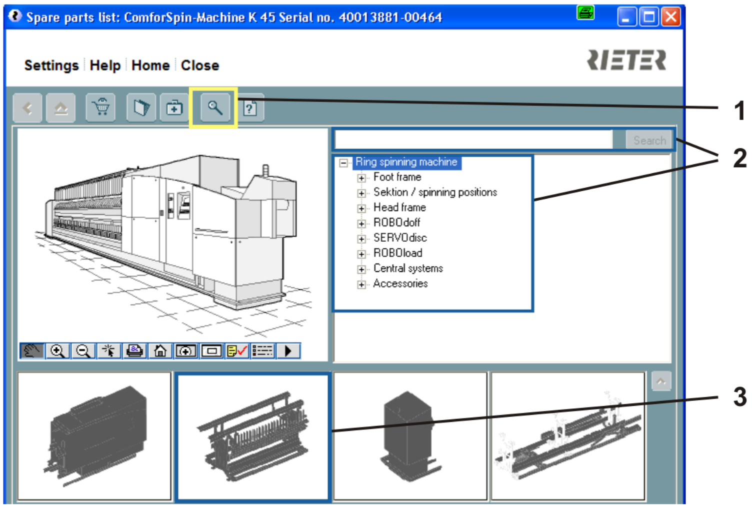

Spare parts list: ComforSpin-Machine K 45 Serial no. 40013881-00464
Settings
Help
Home
Close
RIETER
Search
Ring spinning machine
Foot frame
Sektion / spinning positions
Head frame
ROBOdoff
SERVOdisc
ROBOload
Central systems
Accessories
1
2
3

Figure 144: Navigating through the spare parts catalogue

1. Navigate via full-text search 1, or through text 2 or images 3. To this end, open the selected subassembly by double-clicking as appropriate.

8.6.11 Navigating through Lower-level Sub-assemblies in the Spare Parts catalogue

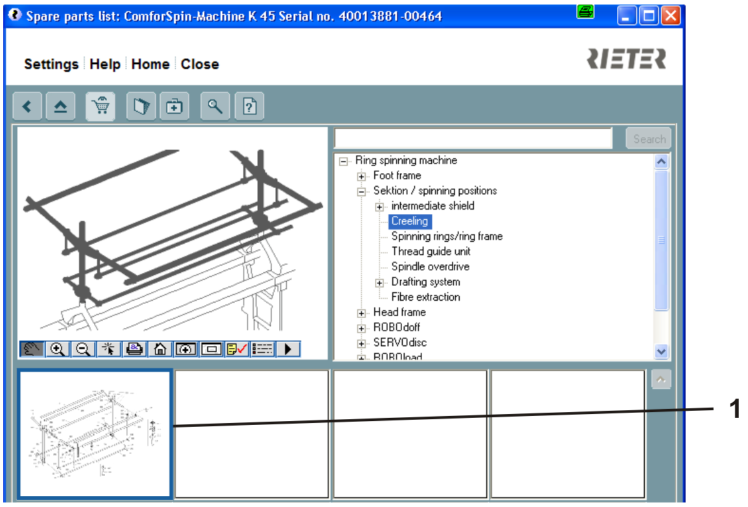
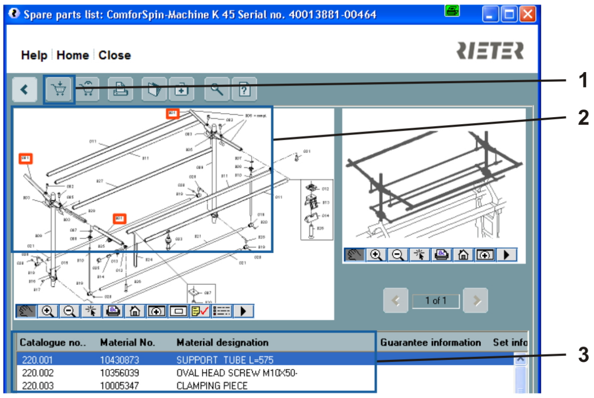

Spare parts list: ComforSpin-Machine K 45 Serial no. 40013881-00464
Settings
Help
Home
Close
RIETER
Search
Ring spinning machine
Foot frame
Sektion / spinning positions
intermediate shield
Creeling
Spinning rings/ring frame
Thread guide unit
Spindle overdrive
Drafting system
Fibre extraction
Head frame
ROBOdoff
SERVOdisc
ROBOload
1

Figure 145: Navigating through lower-level sub-assemblies in the spare parts

1. Navigate through the images 1. To this end, double-click the image.

8.6.12 Selecting Spare Parts for Sub-assemblies



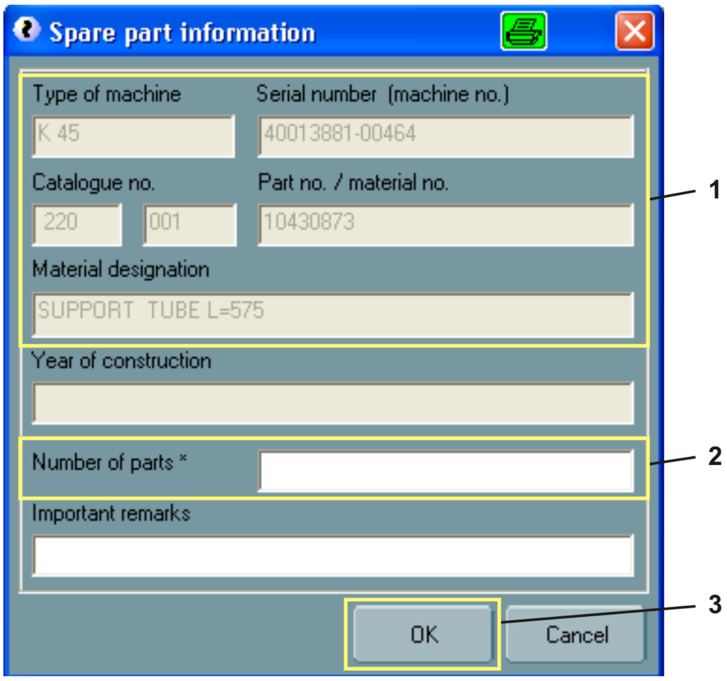
Spare parts list: ComforSpin-Machine K 45 Serial no. 40013881-00464

Catalogue no..	Material No.	Material designation	Guarantee information	Set info
220.001	10430873	SUPPORT TUBE L=575		
220.002	10356039	OVAL HEAD SCREW M10X50-		
220.003	10005347	CLAMPING PIECE		

Figure 146: Selecting spare parts for sub-assemblies

1. Mark the reference numbers of spare parts 2 or select the spare parts from the table 3.
2. Open the shopping basket 1.

8.6.13 Filling in the Order Form



Spare part information

Type of machine: K 45
Serial number (machine no.): 40013881-00464
Catalogue no.: 220 001
Part no. / material no.: 10430873
Material designation: SUPPORT TUBE L=575
Year of construction:
Number of parts *:
Important remarks:

Figure 147: Filling in the order form

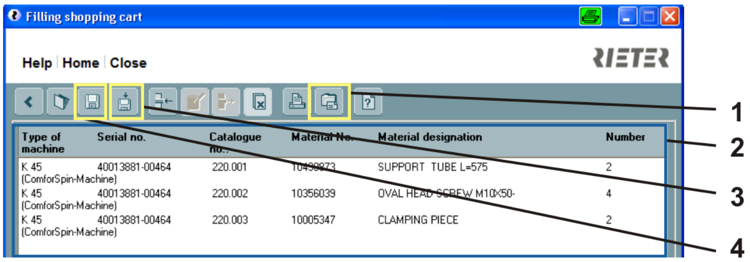
A separate order form has to be filled in for each spare part.

The order form appears after the shopping basket is opened. The data for the selected spare part is automatically added to the order form by the system 1.

1. Enter the required quantity for the spare parts 2.
2. Check the details on the order form and click on OK to confirm the order 3.

After confirming the order, the spare part is “placed” in the shopping basket.

8.6.14 Saving the Shopping Basket Information



Type of machine	Serial no.	Catalogue no..	Material No.	Material designation	Number
K 45 (ComforSpin-Machine)	40013881-00464	220.001	10430873	SUPPORT TUBE L=575	2
K 45 (ComforSpin-Machine)	40013881-00464	220.002	10356039	OVAL HEAD SCREW M10X50-	4
K 45 (ComforSpin-Machine)	40013881-00464	220.003	10005347	CLAMPING PIECE	2

Figure 148: Saving the shopping basket information

1. Check the shopping basket contents 2.
2. Copy the shopping basket information to the clipboard 1.
3. Save the shopping basket information via the “Save as ...” function 3 or the “Save” function 4.

8.6.15 Example of an Order

```
Order data
To (order address):
From (invoice address):
Shipping address:
Person responsible:
Telephone:
Supplier number:
Customer reference:
Dispatching regulations and means of transport:
Additional information for order:
Order list:
--------------------------------------------------------------------------------
K 45   40013881-00464  (   )
--------------------------------------------------------------------------------
Item   Cat. no.    Material no.  Designation                    Number
0010   220.001     10430873      SUPPORT TUBE L = 575             2
0020   220.002     10356039      OVAL HEAD SCREW M10x50           4
0030   220.003     10005347      CLAMPING PIECE                   2
--------------------------------------------------------------------------------
Date 2012-04-04 Signature (person responsible)
```

1

Figure 149: Example of an order

1. Check the data shown on the order form 1.

8.6.16 Switching from the Spare Parts Catalogue to the Operating Manual

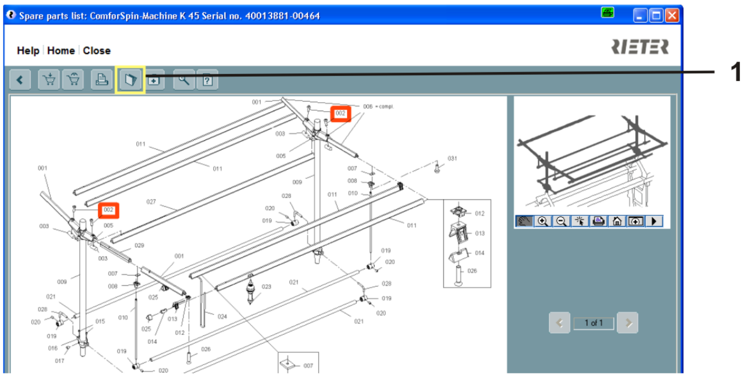

Spare parts list: ComforSpin-Machine K 45 Serial no. 40013881-00464
Help
Home
Close
RIETER
1
1 of 1

Figure 150: Switching from the spare parts catalogue to the operating manual

1. Click on the appropriate button to switch from the spare parts catalogue to the operating manual 1.

8.6.17 Navigating through the Operating Manual

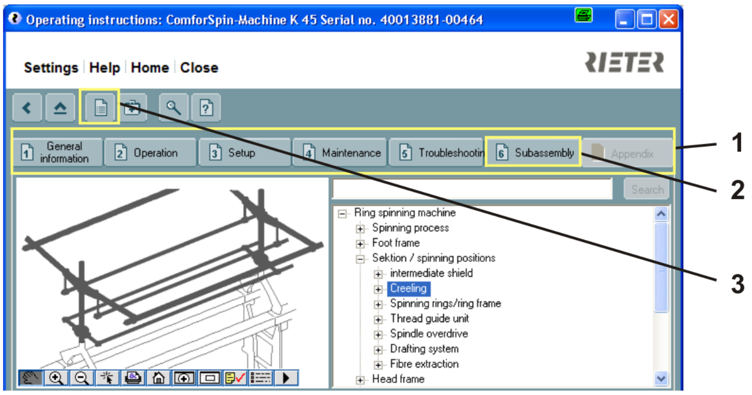
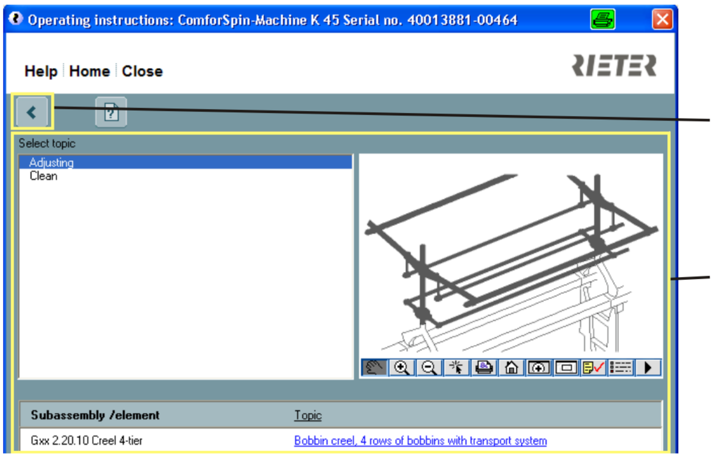

Operating instructions: ComforSpin-Machine K 45 Serial no. 40013881-00464
Settings
Help
Home
Close
RIETER
1 General information
2 Operation
3 Setup
4 Maintenance
5 Troubleshootin
6 Subassembly
Appendix
Search
Ring spinning machine
Spinning process
Foot frame
Sektion / spinning positions
intermediate shield
Creeling
Spinning rings/ring frame
Thread guide unit
Spindle overdrive
Drafting system
Fibre extraction
Head frame
1
2
3

Figure 151: Navigating through the operating manual

1. Use the structure of the chapters to navigate through the operating manual 1.
2. In the “Sub-assemblies” chapter, search according to handling instructions, e.g. fitting of spare parts 2.
3. Switch to the spare parts catalogue 3.

8.6.18 Searching for Handling Instructions in the Operating Manual


Help
Home
Close
RIETER
Select topic
Adjusting
Clean
1
2

Operating instructions: ComforSpin-Machine K 45 Serial no. 40013881-00464

Subassembly /element	Topic
Gxx 2.20.10 Creel 4-tier	Bobbin creel, 4 rows of bobbins with transport system

Figure 152: Searching for handling instructions in the operating manual

1. Read the handling instructions (e.g. for “Settings”) in the operating manual and then carry them out 2.
2. Go back one page 1.

8.6.19 Opening the Operating Manual

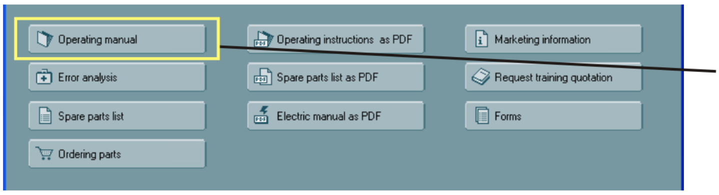

Operating manual
Operating instructions as PDF
Marketing information
Error analysis
Spare parts list as PDF
Request training quotation
Spare parts list
Electric manual as PDF
Forms
Ordering parts
1

Figure 153: Opening the operating manual

1. Click on the appropriate button to open the operating manual 1.

8.6.20 Navigating through the Operating Manual

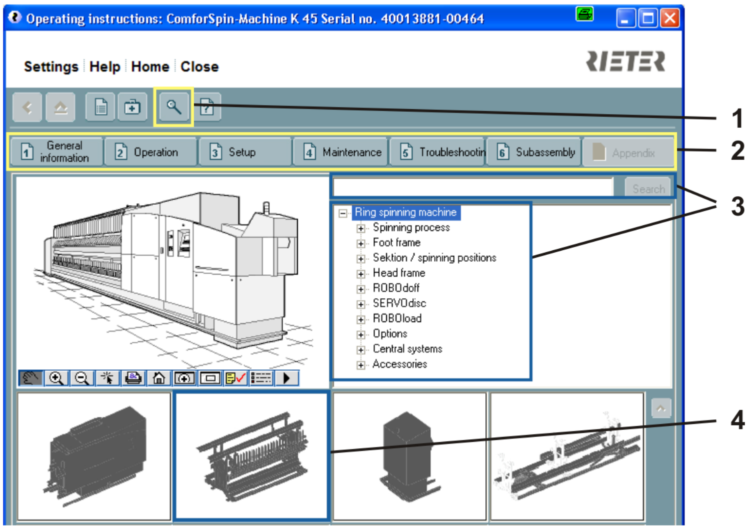

Operating instructions: ComforSpin-Machine K 45 Serial no. 40013881-00464
Settings | Help | Home | Close
RIETER
General information
Operation
Setup
Maintenance
Troubleshootin
Subassembly
Appendix
Search
Ring spinning machine
Spinning process
Foot frame
Sektion / spinning positions
Head frame
ROBOdoff
SERVOdisc
ROBOload
Options
Central systems
Accessories
1
2
3
4

Figure 154: Navigating through the operating manual

1. Navigate via full-text search 1, or through chapters, text 2 or images 3.

8.6.21 Opening the Troubleshooting Information Page

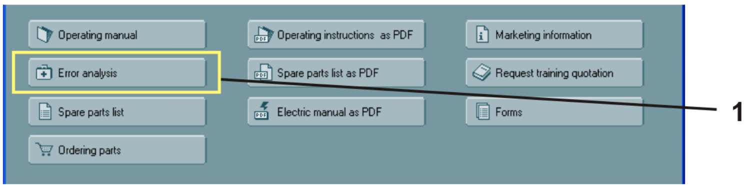
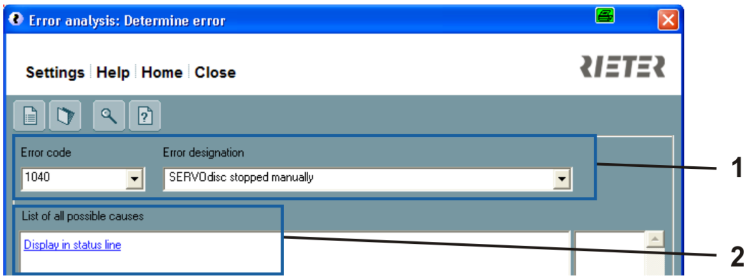

Operating manual
Operating instructions as PDF
Marketing information
Error analysis
Spare parts list as PDF
Request training quotation
Spare parts list
Electric manual as PDF
Forms
Ordering parts
1

Figure 155: Opening the troubleshooting information page

1. Click on the appropriate button to open the troubleshooting information page 1.

8.6.22 Entering the Fault Code


Error analysis: Determine error
Settings | Help | Home | Close
RIETER
List of all possible causes
Display in status line
1
2

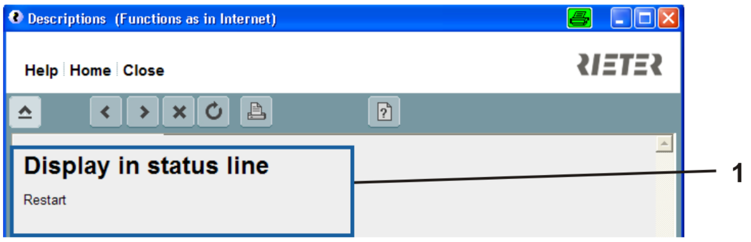
Error code: 1040
Error designation: SERVOdisc stopped manually

Figure 156: Entering the fault code

1. Enter the fault code or select from the list 1.

2. Select suggestion 2.

8.6.23 Rectifying Faults


Descriptions (Functions as in Internet)
Help
Home
Close
RIETER
1

Display in status line

Restart

Figure 157: Rectifying faults

1. Read and then carry out the work instructions 1.

8.6.24 Directly Opening the Order Form for Spare Parts

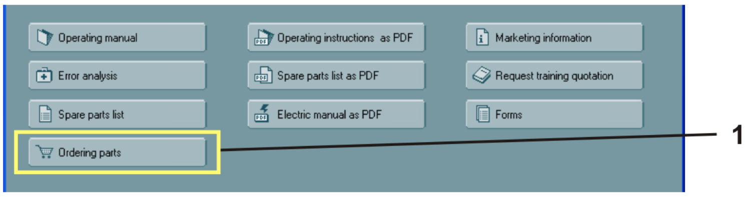

Operating manual
Operating instructions as PDF
Marketing information
Error analysis
Spare parts list as PDF
Request training quotation
Spare parts list
Electric manual as PDF
Forms
Ordering parts
1

Figure 158: Directly opening the order form for spare parts

1. Click on the appropriate button to open the order form for spare parts 1.

8.6.25 “Filling” and “Saving” the Shopping Basket

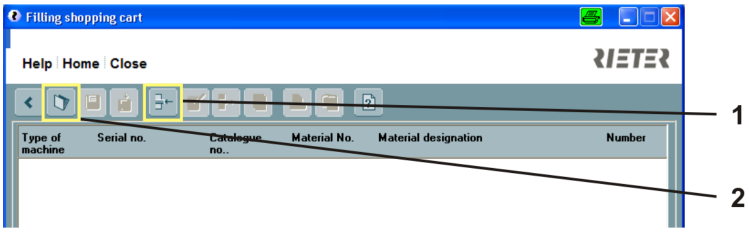
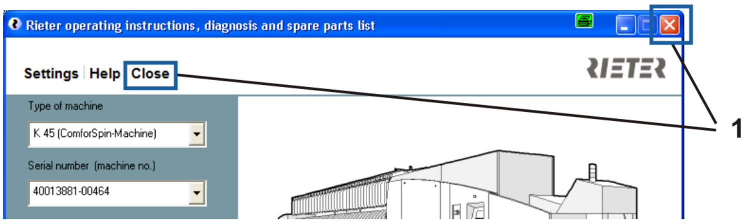

Filling shopping cart
Help
Home
Close
RIETER
Type of machine
Serial no.
Catalogue no..
Material No.
Material designation
Number
1
2

Figure 159: “Filling” and “saving” the shopping basket

1. Enter the information for spare parts in the order form 1. Enter the data manually.
2. Save the shopping basket information 2.

8.6.26 Closing the e-DOC program


Rieter operating instructions, diagnosis and spare parts list
Settings
Help
Close
RIETER
1

Type of machine: K 45 (ComforSpin-Machine)

Serial number (machine no.): 40013881-00464

Figure 160: Closing the e-DOC program

1. Click on the appropriate button to close the e-DOC program **1**.

8.7 Machine Set up; Optimise Settings

8.7.1 Waste Extraction

8.7.1.1 Waste Extraction (Control with Differential Pressure Switch)

Adjust the differential proximity switch.*Waste extraction controlled with differential pressure switch ▸ 130*

8.7.1.2 Waste Extraction (Controlled without Differential Pressure Switches)

1. Set the interval between lock roller start processes.
   Waste extraction controlled without differential pressure switch ▸ 131

8.8 Waste Trough and Exhaust Air

8.8.1 Draw off Waste with Separate Filter Box

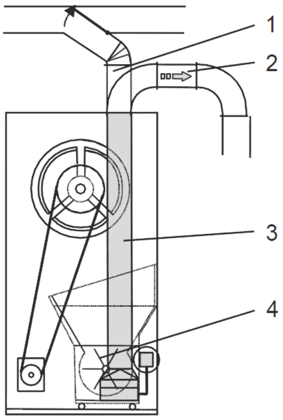


Figure 161: Draw off waste with separate filter box

Draw off Waste with Separate Filter Box

1. Determine waste volume.
2. Remove pipeline 1.
3. Fasten a new pipeline 2 or a hose to a filter box.
4. Restart the machine.
5. Switch on the connected suction unit for sampling.

The lock roller 4 rotates when there is a vacuum in pipeline 3.

Test duration and calculation are described under Technical Definition and Formulas.

1. After completion of the measurements, re-install the pipeline at its original position.

8.8.2 Determining the Waste Volume

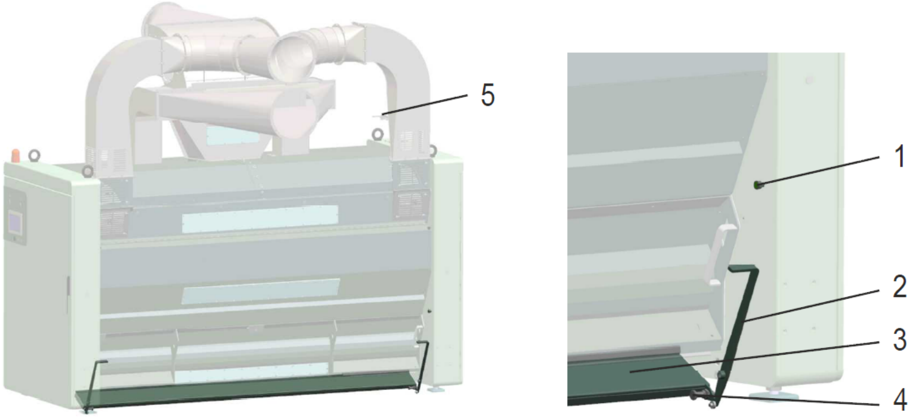


Figure 162: Determining the waste volume

CAUTION

Components lying on the ground

Risk of injury

▶ Remove components after use.

1. Close the slide valve 5. A pressure sensor interrupts the roller rotation.

Test duration and calculation are described under Technical Definition and Formulas.

1. Set the rotation function of the lock roller to Manual.
2. For sampling, rotate the lock roller by pushing the button 1.

Result The lock roller rotates as long as push button is kept depressed.

1. Open the flap 3 by pull in the press plung 4.

2. Wipe up the waste.
3. First mount handles 2.
4. After carrying out the measurement, close the flap.
5. Reverse handles 2.
6. Open the slide valve.
7. Set the rotation function of the lock roller to the previously set values again.

8.8.3 Waste Trough

8.8.3.1 Differential Pressure Switch

8.8.3.2 Description

Purpose: Control of lock roller for waste disposal

Method of Operation

- If the flap 1 is opened by the waste transport controller, a vacuum is created in duct 2.
- The lock roller motor is started by the differential pressure switch 3.
- The lock roller motor runs until flap 1 closes again. There is no more vacuum.
- The lock roller motor is stopped by the differential pressure switch 3.

8.8.3.3 Waste Extraction Controlled with Differential Pressure Switch

Description Differential pressure switch ▸ 130

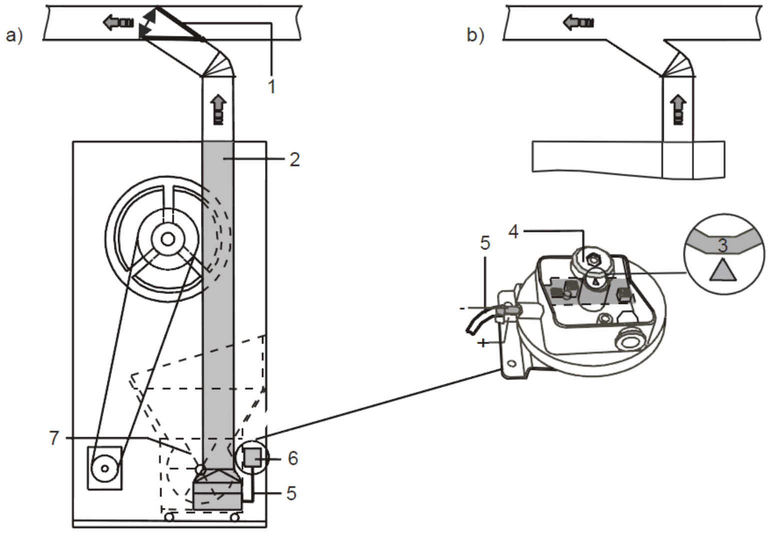


Figure 163: Waste extraction controlled with differential pressure switch

1. Set the adjustment dial 4 to the 3 position.

2. Close the door.
3. Put the system into operation.

When the flap 1 is open, i.e. when there is a vacuum in the duct 2, the lock roller 7 must rotate.

If the lock roller does not rotate, then the vacuum is insufficient, the differential pressure switch setting 6 is set too high, or the pipeline 5 is clogged.

The lock roller rotates even when flap is closed. The flap does not close correctly, the flap contains too much leak air.

The setting at differential pressure switch is too low.

8.8.3.4 Waste Extraction Controlled without Differential Pressure Switch

The time between lock roller start processes is set.

This setting influences the cleanliness of the waste trough.

Setting aim: The lock roller should rotate as little as possible; however, as often as needed to keep the waste trough clean and free of blockage.

Waste Extraction Controlled without Differential Pressure Switch

The time between lock roller start processes is setting the data screen.

The basic setting is 4 minutes.

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9 Troubleshooting

This chapter contains the information about the fault list with the cause and remedies of software, production, and machine faults.

9.1 About the Fault Message Lists

The fault message lists contain maximum 5 columns. The columns contain the information that follows:

Table Head	Explanation
Fault code	The fault code is the number of the fault.
Fault text	A short text with the description of the fault shows on the operating unit.
Fault cause	The fault cause shows the condition that started the fault. 1 or more causes are shown. If necessary, the top field for a fault cause gives more information, such as the machine unit.
Remedy	The remedy shows the alternatives how to correct the fault.
Fault type	The fault type shows icons that give the alarm level of the fault. See the table below.

Alarm Level	Fault icon	Influence on production	Explanation
Alarm	🟥	The production stops.	The alarm immediately stops the production of the machine. No production is possible until the fault is repaired. The fault cause is in units or functions. The units or functions stay in the fault condition or delete the fault condition automatically on specified conditions. The alarm can refer to the machine or a procedure. The alarm shows on the operating unit. The alarm shows with a signalization. Only the primary fault shows. Secondary faults, caused by the primary faults, are frequently not signaled.

Alarm Level	Fault icon	Influence on production	Explanation
Warning message	⚠	The production continues, but the output may be decreased.	The warning messages do not immediately decrease the production. Steps must follow as soon as possible to prevent that the production goes down. Works are necessary to prevent a production stop. The fault cause is in units or functions. The warning message can refer to the machine or a procedure. The warning message shows on the operating unit. The warning message shows with a signalization. Subject to the fault cause, a warning message can get an alarm at any time.
Maintenance warning	🚶	The production continues.	A maintenance warning tells the maintenance personnel to do specified works at the machine. The maintenance warnings are not caused by a maintenance schedule. The maintenance warnings are caused by a monitoring software for the machine units. A maintenance warning always refers to the machine. The 2 types of maintenance warnings are: – Do the maintenance as soon as possible. Get maintenance personnel in less than a day. – Do the maintenance during the next timed maintenance interval. The maintenance warning shows with a signalization. Subject to the fault cause, a maintenance warning can get an alarm at any time.

Data in curly brackets {…} are placeholders for a variable number or a variable text in the fault message.

9.2 About Error Messages

9.3 Classification of Error Messages

The 2 types of error messages are warning and error. The warning messages are used to show, for example, when the can is full or empty. When a warning message shows, the procedure continues; but an intervention by the operator is necessary.

The error messages are shown when the procedure stops and an operator’s intervention is necessary.

9.4 Deleting Error Messages

The error messages need to be deleted after the error is corrected. The deletion must be done in the data screen.

9.5 Faults Not Shown on the Display

The operator identifies the fault that is not shown on the display when the machine is in the operating state.

9.6 Faults Shown on the Display

The faults of the machine are shown in the operating unit of the machine.

9.7 UNIclean

9.7.1 Malfunction

Code	Designation Reaction/consequences	Cause	Remedy
300	Consequences: Starting/stopping time limit exceeded	Pin roller speed not reached	Check the running behavior of the pin roller.
400	Consequences: Safety test time limit exceeded	No message from a safety element.	Emergency unlock mechanism of the door guard locking at position "Open". Check the switching contact. Check the safety circuit. Replace relays K11, K12, K20.
		Defective wiring	Check the wiring.

Code	Designation Reaction/consequences	Cause	Remedy
401	Consequences: Safety relay, K11/K12/ K20	No message from a safety element.	Emergency unlock mechanism of the door guard locking at position "Open". Check the switching contact. Check the safety circuit. Replace relays K11, K12, K20.
		Defective wiring	Check the wiring.
402	Consequences: Safety circuit interrupted, S1/S2/S10	No message from a safety element.	Emergency unlock mechanism of the door guard locking at position "Open". Check the switching contact. Check the safety circuit. Replace relays K11, K12, K20.
		Defective wiring	Check the wiring.
403	Consequences: Error at system test SX, XX	System test stops at step (S3, HX), hardware module X wrong	Check hardware type and function of module X.
		System test stops at step (S4, Bx), BO battery is missing	Replace battery
404	Consequences: Hardware fault Axx	Module Axx is faulty	Plug-in module Axx. Replace module Axx.
406	Consequences: Time limit exceeded, waste disposal, B2	No vacuum – waste disposal	Check vacuum interval of UNIcontrol.
		Vacuum sensor defective	Check the function of the sensor. Check the wiring.
500	Consequences: EMERGENCY STOP, S10	EMERGENCY STOP button has been activated	Reset EMERGENCY STOP button by turning it clockwise.
		EMERGENCY STOP button is defective	Check the EMERGENCY STOP button, replace if necessary.
		Defective wiring	Check the wiring.
501	Consequences: Front door open, S30	The door is open	Close the door.

Code	Designation Reaction/consequences	Cause	Remedy
501	Consequences: Front door open, S30	The limit switch is set incorrectly or is defective.	Correct the setting of the limit switch or replace it.
		Input on the control unit is faulty	Check input signal in the screen "I/O overview".
		Defective wiring	Check the wiring.
502	Consequences: Rear door open, S31	The door is open	Close the door.
		The limit switch is set incorrectly or is defective	Correct the setting of the limit switch or replace it.
		Input on the control unit is faulty	Check input signal in the screen "I/O overview".
		Defective wiring	Check the wiring.
503	Consequences: Plug monitor, lock roller	The plug for the lock roller is not plugged in	Insert plug.
		Plug of the lock roller is defective	Inspect the connector.
		Defective wiring	Check the wiring.
504	Consequences: Exhaust air monitoring	Connections to waste air fan are faulty. The UNIclean does not start the waste air fan.	Check the connections. Check the waste air fan. Check the connections in the UNIclean.
505	Consequences: M3 potentiometer supply interrupted	Potentiometer voltage supply interrupted	Check wiring and potentiometer.
506	Consequences: Short-circuit, potentiometer, M3	Short circuit in the voltage supply of the potentiometer	Check wiring and potentiometer.
507	Consequences: M4 potentiometer supply interrupted	Potentiometer voltage supply interrupted	Check wiring and potentiometer
508	Consequences: Short-circuit, potentiometer, M4	Short circuit in the voltage supply of the potentiometer	Check wiring and potentiometer.
509	Consequences: Motor protection switch – lock roller Q2	Motor protection switch has been triggered	Reactivate the motor protection switch. Check roll and motor for free running.

Code	Designation Reaction/consequences	Cause	Remedy
		Motor protection switch is set incorrectly	Set the motor protection switch correctly (value from the electrical circuit diagram)
		Defective wiring	Check the wiring.
511	Consequences: Spiked roll, motor protection switch Q1	Motor protection switch has been triggered	Reactivate the motor protection switch. Check roll and motor for free running.
		Motor protection switch is set incorrectly	Set the motor protection switch correctly (value from the electrical circuit diagram)
		Defective wiring	Check the wiring.
512	Consequences: Speed, spiked roll B21	An incorrect speed was detected during starting, stopping or in operation.	Check proximity switch, replace if necessary
		Frequency converter defective	Check frequency converter, replace frequency converter if necessary.
		Defective wiring	Check the wiring.
520	Consequences: Initialisation fault, U1	No communication with frequency converter, parameters cannot be loaded	Frequency converter has no voltage supply, the CAN bus is interrupted or the frequency converter is defective.
521	Consequences:	Motor cooling fins clogged	Clean the cooling fins.
	Excess temperature M1	Defective wiring	Check the wiring.
522	Consequences: Excess temperature, frequency converter U1	Frequency converter cooling fins clogged	Clean the cooling fins.
523	Consequences: FC intermediate circuit voltage is too high U1	Intermediate circuit voltage is too high	Check the nominal voltage.

Code	Designation Reaction/consequences	Cause	Remedy
		Frequency converter defective	Check frequency converter, replace frequency converter if necessary.
524	Consequences: FC intermediate circuit voltage is too low U1	Intermediate circuit voltage is too low	Check the nominal voltage.
		Frequency converter defective	Check frequency converter, replace frequency converter if necessary.
525	Consequences: Overcurrent frequency converter U1	Cooling fins clogged, motor defective.	Clean motor and cooling fins, replace motor, if necessary.
		Frequency converter is overloaded	Inspect and clean the drives. Wait for the temperature to drop. Thermal switch closes again. Replace motor if necessary.
526	Consequences: Overload frequency converter U1	Cooling fins clogged, motor defective.	Clean motor and cooling fins, replace motor, if necessary.
		Frequency converter is overloaded	Inspect and clean the drives. Wait for the temperature to drop. Thermal switch closes again. Replace motor if necessary.
527	Consequences: FC communication interrupted U1	Serial communication between frequency converter and controller is not OK.	Check the communication to the converter. Check the frequency converter and relay for enable of the frequency converter.
		CAN bus is faulty	Check CAN bus. Check the frequency converter and relay for enable of the frequency converter.

Code	Designation Reaction/consequences	Cause	Remedy
527	Consequences: FC communication interrupted U1	Frequency converter defective	Check frequency converter, replace frequency converter if necessary.
528	Consequences: Fault at U1 frequency converter	Fault of the shunt on the frequency converter	Check the shunt and connections. Switch the main switch OFF and then ON again.
		Frequency converter defective	Check frequency converter, replace frequency converter if necessary.
529	Consequences: Fault at U1 frequency converter	A fault has occurred in the frequency converter	Switch the machine OFF and ON again. Check the connections.
		Frequency converter defective	Check frequency converter, replace frequency converter if necessary.
530	Consequences: External fault frequency converter U1	Software error	Contact RIETER Service
531	Consequences: General fault frequency converter U1	Software error	Contact RIETER Service

9.7.2 Warning

Code	Designation Reaction/Consequences	Cause	Remedy
5205	Consequences: Ethernet to UNIcontrol interrupted	No data is received from the system controller, wiring is faulty	Check communication between system controller and machine.
		Defective wiring	Check the wiring.

Code	Designation Reaction/Consequences	Cause	Remedy
5206	Consequences: Hardware NOK for UNIcontrol signals	The machine does not have any hardware for digital communication to the UNIcontrol or hardware is defective.	Add IO card. Replace IO card
		Defective wiring	Check the wiring.
5300	Consequences: UNIcontrol assortment not configured	No parameters from system control available for target assortment	On the UNIcontrol, preselect a configured assortment or configure assortment on UNIclean.
5400	Consequences: Safety test in maintenance position	Input signal – door safety switch and EMERGENCY STOP do not agree	Check the wiring. Door safety switch is defective. EMERGENCY STOP defective
		Door front or rear still open, or EMERGENCY STOP activated	Close door. Reset EMERGENCY STOP.
5401	Consequences: Emergency mode, active	Emergency mode configured	Change configuration.
5402	Consequences: Time limit exceeded, waste disposal, B2	No vacuum – waste disposal	Check vacuum interval of UNIcontrol.
		Vacuum sensor defective	Check the function of the sensor. Check the wiring.
5403	Consequences: Waste control system, manual	The waste disposal manual. The lock roller only rotates if you push the lock roller key	Set waste disposal on Interval or Permanent.
5404	Consequences: Waste control system, deactivated	The lock roller was switched off for waste measurements.	Set waste disposal on Interval or Permanent.
5502	Consequences: Speed, spiked roll B1	The spiked roll is clogged.	Clean the spiked roll.
		Proximity switch is not set correctly or faulty	Check B11 proximity switch. Replace proximity switch.

Code	Designation Reaction/Consequences	Cause	Remedy
		Frequency converter defective	Check frequency converter, replace frequency converter if necessary.

9.7.3 Maintenance Warning

Code	Designation Reaction/consequences	Cause	Remedy
7400	Consequences: Replace PLC battery A10	The battery voltage has insufficient voltage or is missing	Replace battery.
7401	Consequences: Time delay – EMERGENCY STOP	Time delay incorrectly set on the relay, relay is defective	Check the settings on relay K110. Check relay.
7402	Consequences: Movement, measurement, electrical cylinder front M3, XX	The corresponding electric cylinder has not reached the position	Check the electric cylinder, replace if necessary. Check the connections.
7403	Consequences: Movement, measurement, electrical cylinder rear M4, XX	The corresponding electric cylinder has not reached the position	Check the electric cylinder, replace if necessary. Check the connections.

9.7.4 Message

Code	Designation Reaction/consequences	Cause	Remedy
8000	Consequences: Automatic mode activated	Automatic mode active	No action
8001	Consequences: Service mode activated	Service mode active	No action
8002	Consequences: Switch-on procedure	Machine is being initialised	No action
8003	Consequences: Machine ready to start	Machine can be started	No action

Code	Designation Reaction/consequences	Cause	Remedy
8004	Consequences: Start procedure	Machine starting	No action
8005	Consequences: Production on	Production on	No action
8006	Consequences: Stop procedure	Machine stopping	No action
8007	Consequences: Blow-room stop	Stop command from system control	No action
8008	Consequences: Fault	A fault is pending	No action
8009	Consequences: Operator STOP	Operator has pushed STOP	No action
8021	Consequences: Electric cylinder distance measurement	Electric cylinder distance measurement executed	No action
8027	Consequences: Frequency converter is being initialised	Frequency converter is being initialised	No action
8028	Consequences: Continuous test active	Endurance test active	No action

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10 Maintenance

This chapter contains the information about the maintenance of the machine.

10.1 Cleaning Table by Cycle

10.2 Lubrication Table by Cycle

Target group	Lubrication cycle	Additional information	
Maintenance Personnel (for maintenance table)	Lubrication each 18 100 h	10.10.2	Lubricating the Cylinder
	Lubrication each 19 700 h	10.10.3	Lubricating the Cylinder

10.3 Inspection Table by Cycle

10.4 Maintenance Personnel

Only the Rieter-approved personnel are permitted to do the maintenance work at the machine.

10.5 General Information

Make sure that only approved personnel do the maintenance works.

The maintenance works contain cleaning tasks, lubrication tasks, and inspection tasks.

The intervals shown below are guide values.

Interval Specification	Duration in 3-shift Operation
165 operating hours	1 week
330 operating hours	2 weeks
660 operating hours	4 weeks
2 000 operating hours	3 months
4 000 operating hours	6 months
8 000 operating hours	1 year

10.6 Maintenance Overview

This section contains the information about the necessary tools and the necessary lubrication materials that are used during the maintenance work.

10.7 Maintenance Schedule

This section has the information about the maintenance work that is necessary to do in the different maintenance intervals.

10.8 Maintenance Tasks

The standard conditions that follow have effects on the schedule of cleaning:

- Air quality
- Humidity
- Temperature

You can decrease the time interval if your conditions are not standard.

10.9 Cleaning Tasks

The following tasks are executed by operating personnel during shift operation.

10.9.1 Safety Precautions during Cleaning Work

Safety Precautions

Switch OFF main switch Q10 and secure with padlock.

All jobs requiring these security measures are indicated by an appropriate symbol on the particular page.

Inflammable Fuel

If inflammable cleaning agents are used in the spinning mill, their flash point should be above 55ºC.

10.9.2 Cleaning the Grating and Lock Roller

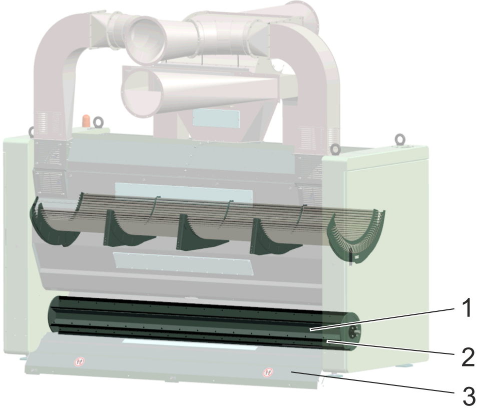

Figure 164: Cleaning the grating and lock roller

1. Set the main switch to the OFF position. Secure with a lock.
2. Pull out plug.
3. Extend out the waste trough 3. Turn the lock roller 2 by hand.
4. Check the sealing strips 1 for wear.

5. Replace any defective sealing strips.
6. Check the side walls. Clean as needed.
7. Check the grating accumulation of fibres. Clean as needed.

10.9.3 Cleaning the Cylinder Interior

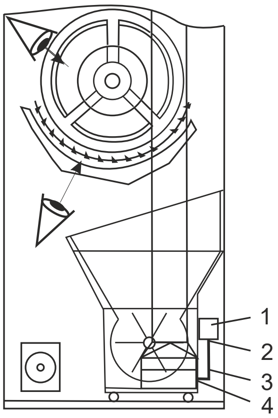

Figure 165: Cleaning the cylinder interior

1. Set the main switch to the OFF position. Secure with a lock.
2. Clean the drum interior and the grating adjustment element with a vacuum cleaner.
3. Inspect the air line **3** at connection **4** for clogging.
4. Loosen the connection **2** on the differential pressure switch **1**.
5. Blow through the air line from the connection **2** towards **4**. Never blow into the differential pressure switch with compressed air.

10.9.4 Cleaning the Cooling Fins of the Converter

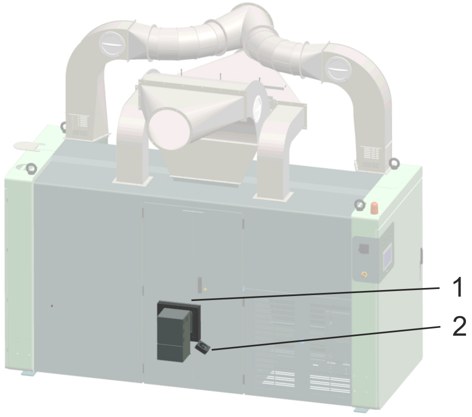

Figure 166: Cleaning the cooling fins of the converter

1. Set the main switch to the OFF position. Secure with a lock.

2. Clean the cooling fins 1 with a vacuum cleaner.
3. Clean the cooling fan 2.

10.9.5 Clean the Panel and the Buttons

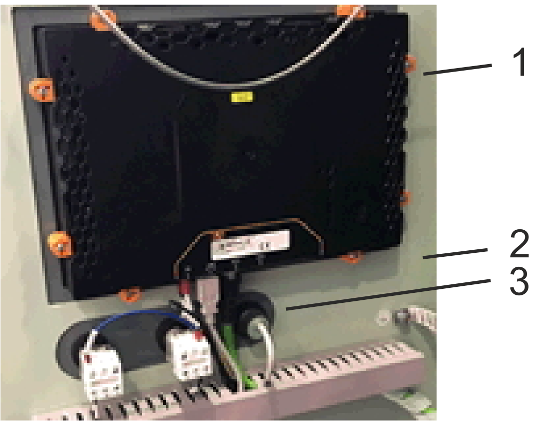

Figure 167: Clean the panel and the buttons

Clean the rear panel 1 and the button switches 3 on the left side of the machine 2.

10.9.6 Cleaning/Lubrication

Purpose of Cleaning

Regular maintenance and constant cleaning of the machine contribute towards trouble-free operation.

Use of Cleaning Agents

Natural residue from cotton, such as honeydew, is best cleaned off with a cleaning rag and hand-warm water.

Residue from lubricants and deposits from synthetic fiber material are best cleaned with a solvent that does not attack rubber and paint. e.g. use cleaning alcohol or water with a grease-dissolving general-purpose cleaner.

Use a high-powered industrial vacuum cleaner to remove dust and fly. The suction nozzle must be fitted with a plastic tip.

After cleaning, the least volatile cleaning agents such as kerosine, white spirit, must be blown out of the antifriction bearings, using clean compressed air and without rotating the bearing.

Caution

Unauthorised conversions or modifications are not allowed, as there is then no guarantee that the machine will function correctly.

10.9.7 Control Perforated Plate for Dust Separation

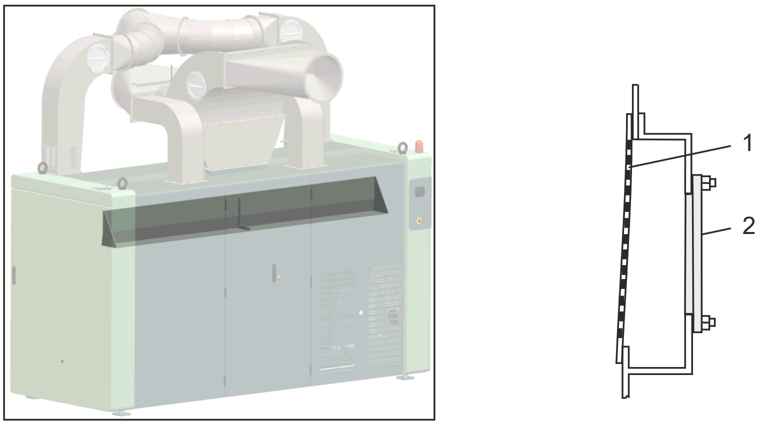

Figure 168: Control perforated plate for dust separation

1. Control the perforated plate **1** for damage, such as bulges, or abraded points.
2. Replace any defective perforated plates.
3. Replace damaged windows **2**.

10.9.8 Frequency Converter

10.9.8.1 Clean the Housing of the Frequency Converter

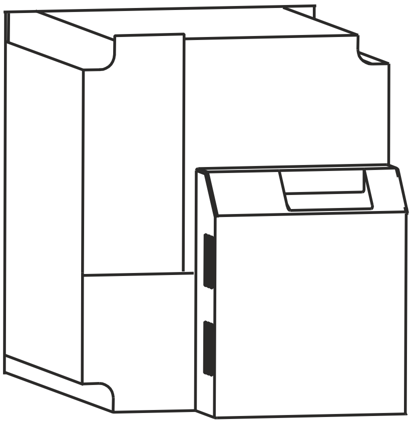

Figure 169: Clean the housing of the frequency converter

WARNING

Non-adherence to discharge time

Risk of death or severe injury

- ✓ After disconnecting from the mains, wait for 10 minutes (discharge time).
- ✓ Only qualified electricians are permitted to work at the frequency converter.
- ▶ Do not touch any live parts.
- ▶ Wait until the LED is no longer lit.

1. Clean the surface of the housing with a vacuum cleaner.

10.10 Lubrication Tasks

This section contains the information about the lubrication of the machine.

CAUTION

Incorrect storage and incorrect handling of the lubricants

Irritation or burns to your skin, eyes, or respiratory tract

Risk of slipping when spilled

- ▶ Read the safety data sheet.
- ▶ Use safety gloves and safety goggles.
- ▶ Do **not** touch hot lubricants.
- ▶ Clean up after spillage.

10.10.1 Safety Precautions during Lubrication

Remove any drops of oil and other lubricants on the floor immediately to prevent all risk of slipping and falling.

10.10.2 Lubricating the Cylinder

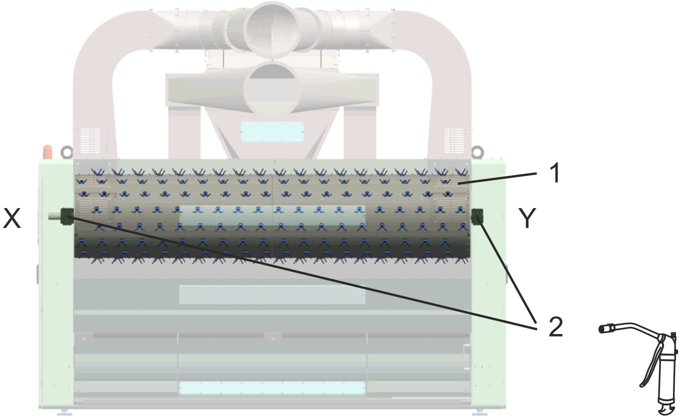

Figure 170: Lubricating the cylinder

1. Lubricate the bearings 2 of the roller 1 on the left-hand Y and right-hand X side of the machine with 2...3 pump thrusts.
2. Use the grease LGWA 2 (NLGI 2) from the manufacturer SKF. See product data sheet and safety data sheet of the manufacturer.
3. For the next maintenance additionally fill in grease from above. For Bearing 22212 EK X, 18 100 hours volume 6 g.
4. For the next maintenance additionally fill in grease from above. For Bearing 22211 EK Y, 19 700 hours volume 5 g.

10.10.3 Lubricating the Cylinder

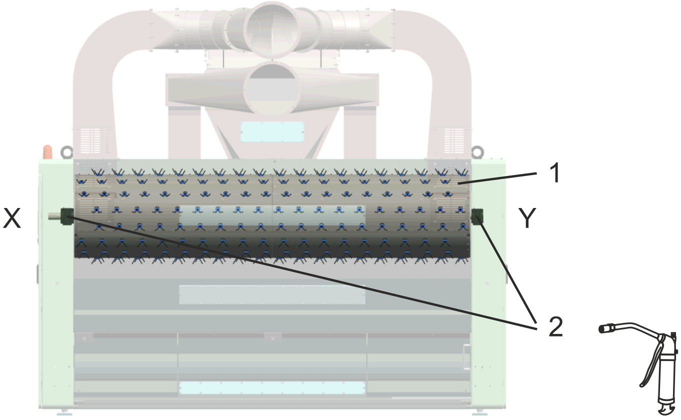

Figure 171: Lubricating the cylinder

1. Lubricate the bearings 2 of the roller 1 on the left-hand Y and right-hand X side of the machine with 2...3 pump thrusts.
2. Use the grease LGWA 2 (NLGI 2) from the manufacturer SKF. See product data sheet and safety data sheet of the manufacturer.

3. For the next maintenance additionally fill in grease from above. For Bearing 22212 EK X, 18 100 hours volume 6 g.
4. For the next maintenance additionally fill in grease from above. For Bearing 22211 EK Y, 19 700 hours volume 5 g.

10.10.4 Changing the Gear Motor Grease

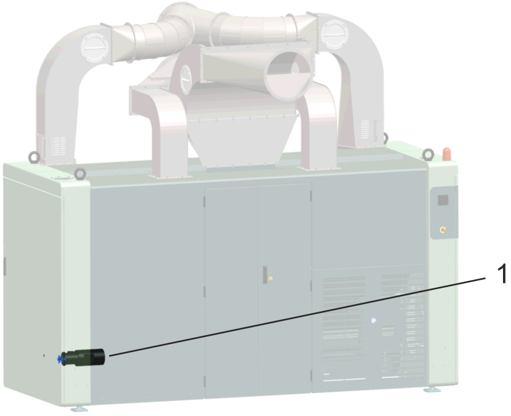

Figure 172: Changing the gear motor grease

1. Change the gear motor grease.
2. Remove the motor to the side.
3. Use 330 cm³ Oil.
4. Use Oil ISO VG 220, CC220. See product data sheet and safety data sheet of the manufacturer.

10.11 Inspection Tasks

This section contains the information about the inspection tasks of the machine.

10.11.1 Inspect the Seals

1. Inspect the seals.
2. Inspect the seals for accumulations of fibers and dust.

10.11.2 Lock Roller, Check Seals on the Facing Side

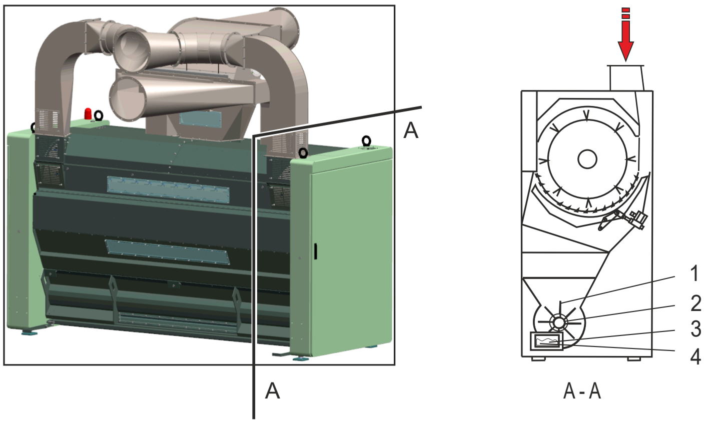

Figure 173: Lock roller, check seals on the facing side

1. Check the seals on the lock roller between two suction intervals. If there is an accumulation of waste at points **3** and **4**, observe the following:
2. Check the seals **2** on the front side.
3. Check the sealing strips **1**.
4. Check the running time of the lock roller.

10.11.3 Inspect the Double Tines

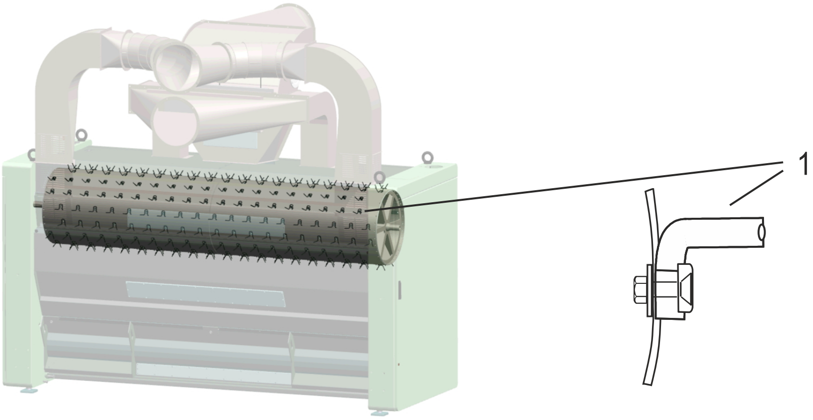

Figure 174: Inspect the double tines

1. Set the main switch to the OFF position. Secure with a lock.
2. Check the double tines for wear.
3. Replace bent or worn double tines **1**. Only use original spare parts.

10.12 Explanations for Maintenance and Intervals

Maintenance Necessity

Periodic maintenance is a prerequisite for long life time.

Periodic maintenance avoids unnecessary down time.

Maintenance Targets

To keep equipment in good conditions with a minimum of problems.

To avoid interruptions by preventing measures

Pay Backs of Organized Maintenance

Maintenance may be scheduled and labor requirements anticipated

Not Sufficient Maintenance or Poorly Organized Maintenance:

Problems will arise at any time, avoidable loss of production will be encountered

Correct Cleaning Procedures

Cleaning must be done in a timely manner and at the right place.

Correct Lubrication Procedures

Lubrication procedures must be done in a timely manner with proper lubricant at the right place and in the right amount.

To be able to lubricate properly it is necessary to have good equipment and exact operational scheduling.

Preparations require that machines and equipment are in appropriate conditions.

Personnel must be trained and familiar with the task on hand.

Adapt Maintenance Schedules to Operating Conditions

Maintenance schedules depend upon material, trash content, air condition, and operating conditions.

The recommended maintenance schedules are mere proposals to be changed according to local conditions.

Intervals

There are intervals which are valid either only once or at cyclical intervals.

The unique ones are only to be used after the first installation and start-up. This can apply to the whole machine or to an individual element. For example, should a newly fitted belt needed to be re-stretched after a certain running time.

Cyclical tasks must be performed repeatedly.

For example, after a running time of 660 hours, the 165, the 330 and the 660 maintenance work must be carried out.

In 3 shift operation, the following intervals correspond to the quoted times.

165 operating hours = 1 week

330 operating hours = 2 weeks

660 operating hours = 4 weeks

2000 operating hours = 3 months

4000 operating hours = 6 months

8000 operating hours = 12 months

Maintenance Planning

The maintenance schedule serves as overview for this.

The maintenance schedule is given in tabular form and lists the intervals at which the different maintenance work is required.

The maintenance plan permits a detailed customer-specific maintenance schedule to be drawn up.

The work description is referenced for each piece of maintenance work.

For service specialists who carry this work out on a routine basis, this need to refer to a work description is no longer necessary.

The tabulated column "Values" gives the service specialist details of the lubrication points.

The tabulated column "Values" contains a summary of the most important data on the corresponding lubrication points.

1. Location designation of the lubrication points
2. Number of lubrication points, for example the number of lubricating nipples = 8.
3. Lubricant information, e.g. EP2
4. Lubricant type, e.g. "grease"
5. Lubricant quantity, e.g. 3 pump strokes per lubricating nipple.

10.13 Lubricant Manufacturer

Lubricant	Manufacturer	Name
CC220	AGIP	BLASIA 220
	AVIA	AVIA GEAR RSX 220
	BP	ENERGOL GR-XP 220
	CASTROL	ALPHA SP 220
	ExxonMOBIL	MOBILGEAR 600 XP 220

	KLÜBER	KLÜBEROIL GEM 1 -220N
	OPTIMOL	OPTIGEAR BM 220
	PETRO CANADA	ENDURATEX EP 220
	SHELL	OMALA S2 G 220
	TEXACO	MEROPA 220
	VALVOLINE	EPG 220

10.14 Standard Lubricant

Code	Designation	Viscosity	DIN	ISO	Description
CC220	EP oil	ISO viscosity mm^2/s 40 °C 220	CLP220 (51517/3)	CC220	Paraffin base oil, VI > 90.Little or no swelling of Orings or other synthetic rubber gaskets. Not aggressive to bronze. Good load-bearing ability; FZGTest Load class 12. Extreme pressure additives on basis of phosphorus sulphur or equivalent EP additives.

10.15 Lubrication Points

Lubrication Point for Cylinder 1 see Cleaning Interval 18100 h.

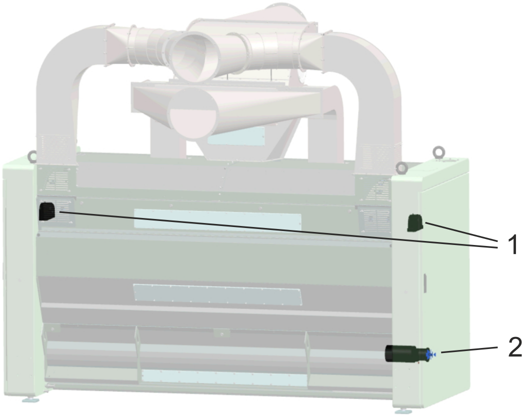

Figure 175: Lubrication points

Location number	Place	Number	Medium	Quantity	Special tools
2	Lock roller gearbox	2	CC220	330 cm³	

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11 Repair

This chapter contains the information about how to repair the defective machine parts.

11.1 General Information

Make sure that only approved personnel do the repair work.

During the repair work, the approved personnel replace machine parts that do not work correctly. The repair work makes sure that the machine is malfunction-free in the production.

11.2 Repair Work

This section has the information about the repair work of the machine.

11.3 Machine Set up; Optimise Settings

11.3.1 Replacing the Frequency Converter

11.3.1.1 Loading

The device must be equipped with the necessary components.*Identifying the frequency converter* ▸ *62*

Loading the frequency converter ▸ *169*

Cooling-system adjustment ▸ *171*

11.3.1.2 Configuration

Configure the components.*Configuring the frequency converter U1* ▸ *170*

Setting the T1000V frequency converter ▸ *171*

11.4 Cleaning Point

11.4.1 Grid

11.4.1.1 Remove Grating Bars

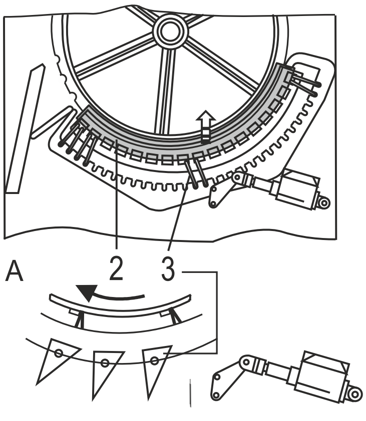

Figure 176: Remove grating bars.

1. Set the main switch to the OFF position. Secure with a lock.
2. Remove the grate bars with two people.
3. One person is inside the machine to guide the grating bars 3.

Opening the flap on the lock roller ▸ 114

1. Loosen the cover template 2 and push downwards.
2. Turn the grating bars 3 slightly and pull outwards. The person inside the machine must guide the grating bars during the process.
3. Do NOT swap out the grating bars of the grating half A.
4. Do NOT swap out the grating bars of the grating half B looking at the drive.

11.4.1.2 Installing the Grating Bars

1. Set the main switch to the "OFF" position and secure with a lock.
2. Install the grate bars with two people.
3. One person needs to be positioned inside the machine to guide the grating bars.
4. Installation is performed using the same sequence, but in reverse order.

11.4.1.3 Electric Cylinder for the Grating Setting

Setting the Lifting Rod

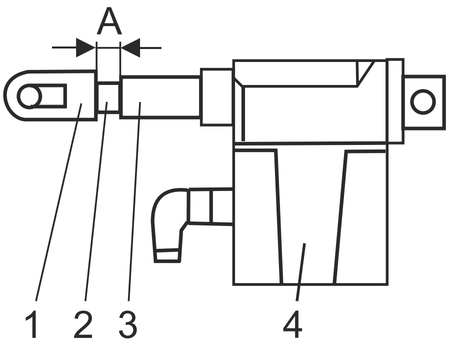

Figure 177: Electric cylinder for the grating setting

1. After replacing the electric cylinder adjust the lifting rod so that it does not move to the limit stop.

Connecting Rod

A 7 – 10 mm

1. Rotate the lifting rod 2 until the value A is reached.

11.4.1.4 Grid Adjustment

11.4.1.5 Description

Purpose: Cleaning Intensity, Cleaning Map, Relative Waste Volume

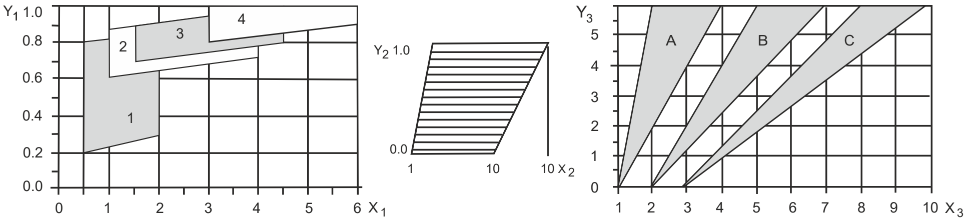

Figure 178: Description

Y1	Cleaning intensity	X2	Relative waste volume
X1	Trash content	Y3	Trash content
Y2	Relative cleaning intensity	X3	Relative waste volume

Method of Operation

The combination of cleaning intensity and waste volume leads to a higher degree of cleaning. The raw material (impurity content, ease of cleaning) and the final product (yarn) are important factors at this process.

1 Ring Yarn combed, finer than Nm 80 (Ne 45, tex 12.5)

2 Ring Yarn carded, up to Nm 80 (Ne 45, tex 12.5)

3 Rotor Yarn, carded or combed, finer than Nm 35 (Ne 20, tex 28)

4 Rotor Yarn carded, up to Nm 35 (Ne 20, tex 28)

Purpose: Relative Output Quantity

A

In this plant only raw cotton is processed. The resulted waste is not further processed within the plant. The waste is sold. The waste volume is kept low in an effort to keep fibre loss to a minimum. The cleaning effect has to be ensured that is adequate.

Example: Impurity content 3%, Setting 2

B

In this example are two blow-room lines, line 1 and 2. No recycling material is added to line 1. The waste from line 1 is added to line 2 within the plant. As there is no actual loss, the relative waste volume setting can increase.

Example: Impurity content 3%, Setting 4

C

The recycled raw cotton material is added to line 2 at the blowroom line. The impurity content will also be higher. The relative waste volume is therefore set to a large value.

Example: Impurity content 5%, Setting 8

11.5 Control Technique

11.5.1 Basic Module of the Control System

11.5.1.1 Control System Battery

11.5.1.2 Change Battery of Control System

Removing battery from the controller ▶ *163*

Installing battery of the controller ▶ *163*

11.5.1.3 Removing Battery from the Controller

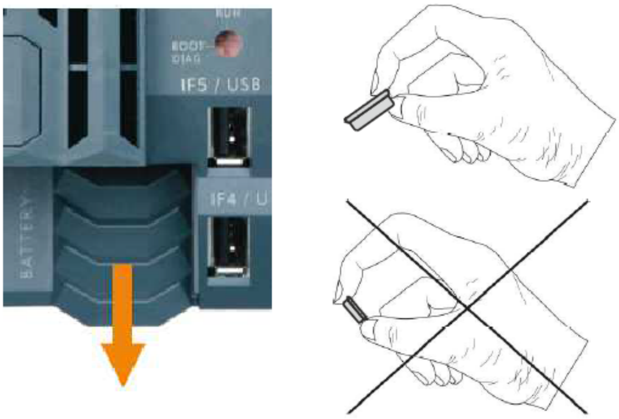

Figure 179: Removing battery from the controller.

During a battery change in de-energized status, data (machine data, customer data) in the data memory are lost.

1. Pull away the cover.
2. Pull the battery out of the holder. In this process, do not touch the battery with nippers or uninsulated tweezers. Short-circuit hazard. Only touch the battery on the front sides with your hand.

11.5.1.4 Installing Battery of the Controller

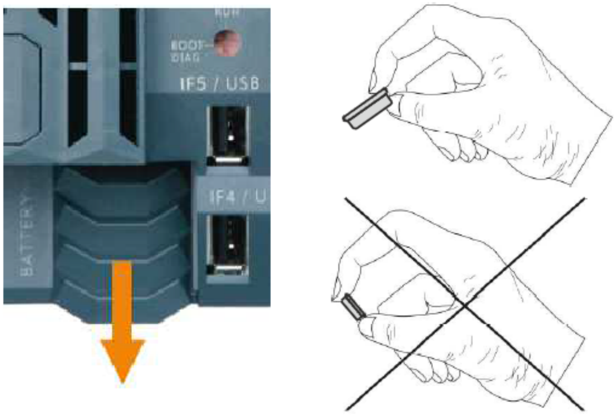

Figure 180: Installing battery of the controller

1. Execute the electrostatic discharge on the DIN rail, e.g. on the earth connection. Do NOT reach into the power supply.
2. To do this, Do NOT touch the battery with nippers or uninsulated tweezers. Short-circuit hazard. Only touch the battery on the front sides with your hand.
3. Insert the new battery into the right polarity. To do this, place the battery with the + side facing up on the right part of the battery holder below the USB interface.

4. Fix the battery in place in the holder, through pressure above the left part of the battery holder.
5. Fit the cover.
6. Lithium batteries are hazardous waste. Dispose lithium batteries as hazardous waste.

11.6 Frequency Converter

11.6.1 Frequency Converter

11.6.1.1 Replacing the Frequency Converter

Remove the frequency converter ▸ *164*

Install the Frequency Converter ▸ *167*

Frequency converters are subject to a natural ageing process. Frequency converters are to be replaced at regular intervals with inspected replacement devices. This is an effective means of preventing device failure. Only authorised RIETER service personnel may service frequency converters. Contact the nearest RIETER service centre or RIETER for replacement devices or inspection of the frequency converters.

11.6.1.2 Remove the Frequency Converter

⚠ **WARNING**

Non-adherence to discharge time!

Risk of death or severe injury

✓ After disconnecting from the mains, wait for 10 minutes (discharge time).

✓ Only qualified electricians are permitted to work at the frequency converter.

▶ Do NOT touch any live parts.

▶ Wait until the LED is no longer lit.

Removing the Terminal Cover

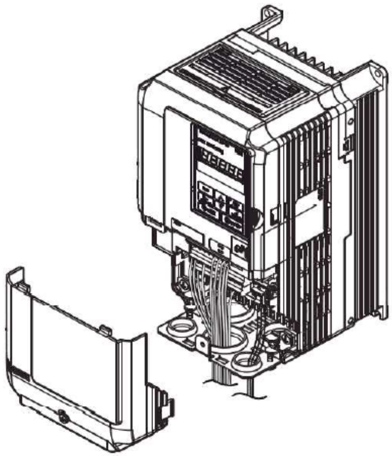

Figure 181: Removing the terminal cover

1. Remove the Terminal Cover.
2. Loosen the screws holding the terminal board in place.
3. Take out the screw securing the bottom cover. Remove the bottom cover from the drive. Drives set up for compliance with IP00 do not have a bottom cover.

Removing the Terminal Board

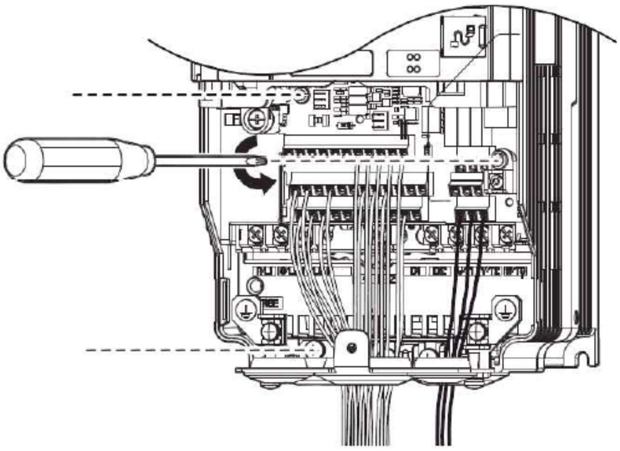

Figure 182: Removing the terminal board_slide

1. Slide the terminal board as illustrated by the arrows.

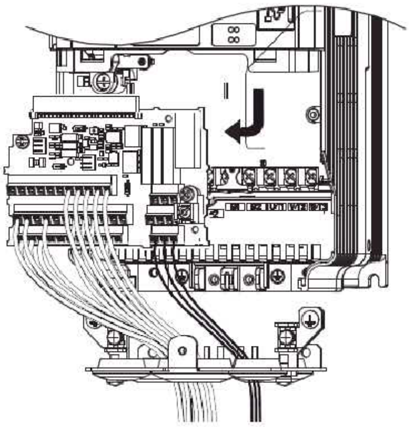

Figure 183: Removing the terminal board_bottom_cover

2. Remove the terminal board from the drive along with the bottom cover.

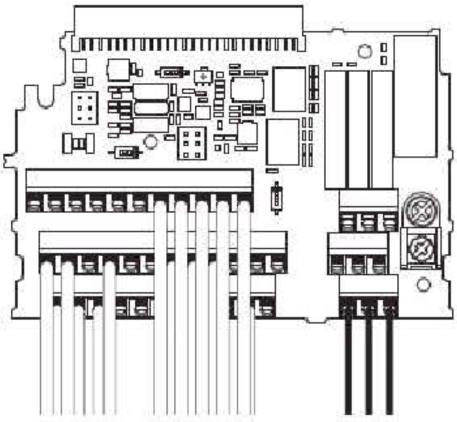

Figure 184: Removing the terminal board_disconnect

3. Disconnect terminal board from the drive.
4. Disconnect all option cards and options. Make sure they are intact before reusing them.
5. Replace the drive. Wire the main circuit.

Read-off the Charge Indicator

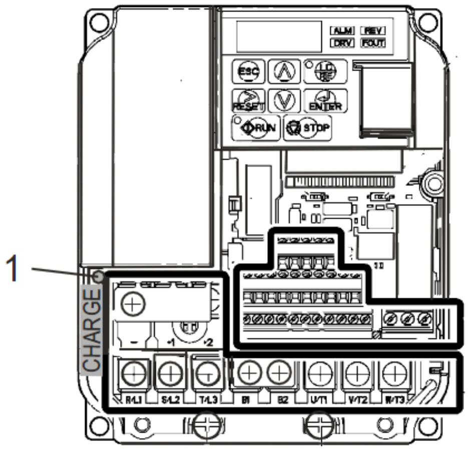

Figure 185: Read-off the charge indicator

1. Check whether or not the LED (CHARGE) lights up. The LED will be lit if the voltage for the intermediate circuit exceeds 50 VDC.
2. Wait until the (CHARGE) LED 1 has gone out.
3. After the LED (CHARGE) has gone out, wait another 5 minutes.
4. Measure the residual voltage between the terminals with the designations (-) and (+1) (intermediate circuit). The terminals are arranged at different places of the power terminals.
5. As soon as the residual voltage for the intermediate circuit has dropped to below 30 VDC, disconnect the cables.

Disconnect Cable

1. Check the labelling of terminals and cables. Ensure that the cables can be properly connected during reinstallation.
2. Disconnect the power and control terminals.
3. Disconnect the earth cable from the earth terminal.
4. Do NOT pull the cables out of the cable bushings. The cable glands remain in the electrical control cabinet of the machine when the frequency converter is replaced.
5. Loosen the four screws. Remove the frequency converter.

11.6.1.3 Install the Frequency Converter

Identifying the Frequency Converter

1. Make sure the correct device is available before installation.

Identifying the frequency converter ▸ 62

Installing the Device

Install the device. Proceed in reverse order as followed for removal.

Loading the frequency converter ▸ *169*

Configure the Device

Configure the device for use with this machine.

Configuring the frequency converter U1 ▸ *170*

Install the Frequency Converter

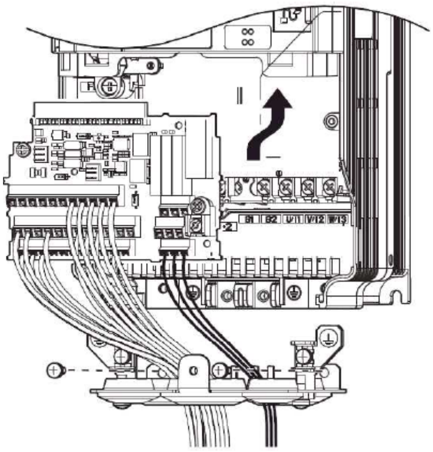

Figure 186: Install the frequency converter

Install the frequency converter.

Connecting Cables

1. Proceed in reverse order of removal.
2. Connect the control, power and earth cables according to the cable designations. Pay attention to the electrical documentation.
3. Pay attention to the specification for the connection of the earth cable.

11.6.1.4 Loading the Frequency Converter

WARNING

Non-adherence to discharge time!

Risk of death or severe injury

- ✓ After disconnecting from the mains, wait for 10 minutes (discharge time).
- ✓ Only qualified electricians are permitted to work at the frequency converter.
- ▶ Do not touch any live parts.
- ▶ Wait until the LED is no longer lit.

The device has to be equipped according to the version.

CAN Module (SI-S3)

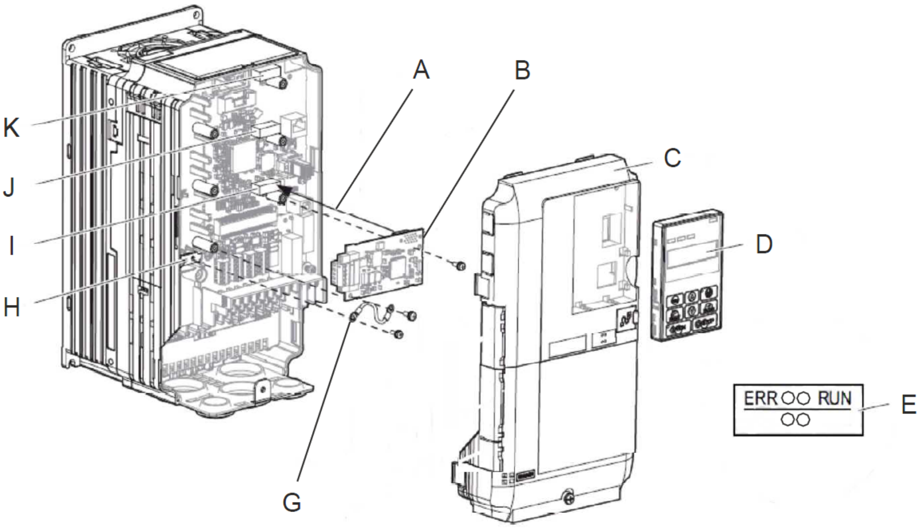

Figure 187: CAN module (SI-S3)

A	Insert connector CN5 here	G	Lead line
B	Option card CAN module (SI-S3)	H	Drive grounding terminal
C	Front cover	I	Connector CN5-A
D	Operator	J	Connector CN5-B
E	LED Label	K	Connector CN5-C

1. Shut OFF power to the drive.
2. Wait the appropriate amount of time for voltage to dissipate.
3. Remove the operator and the front cover.
4. Insert the CN5 connector on the option card into the CN5-A connector on the drive.

5. Fasten the connector into place using one of the screws included with the option card.
6. Connect the ground lead line to the ground terminal using one of the screws delivered with the option card.

There are only two screw holes on the drive for ground terminals. If three option cards are connected, two of the lead lines will need to share the same ground terminal.

11.6.1.5 Configuring the Frequency Converter U1

WARNING

Non-adherence to discharge time!

Risk of death or severe injury

- ✓ After disconnecting from the mains, wait for 10 minutes (discharge time).
- ✓ Only qualified electricians are permitted to work at the frequency converter.
- ▶ Do not touch any live parts.
- ▶ Wait until the LED is no longer lit.

Switches and Jumpers on the Terminal Board

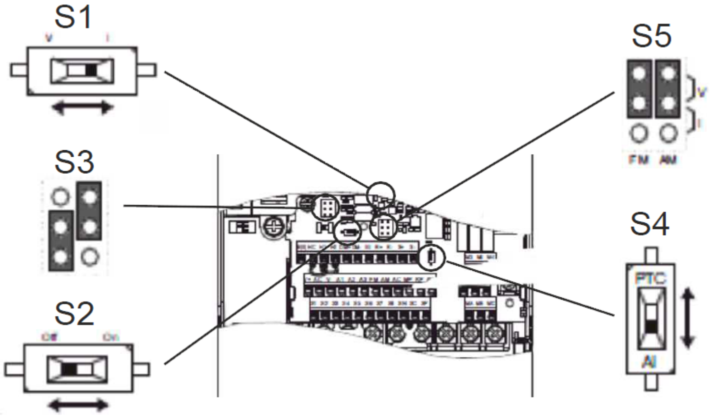

Figure 188: Switches and jumpers on the terminal board

The terminal board is equipped with switches used to adapt the drive I/O to the external control signals.

1. Set the DIP Switch S1, Terminal A2 Signal Selection to I. (Selection: I/V)
2. Set the DIP switch S2, RS-422/485 Termination Resistor to ON. (Selection: ON/OFF)
3. Set the DIP switch S4, Terminal A3 Analog AI/PTC Input Selection to AI. (Selection: AI/PTC)

4. Set the Jumper S3, Terminal H1/H2 Sink/Source Selection to Sink. (Selection: Sink/Source)
5. Set the Jumper S5, Terminal AM/FM, Signal Selection to AM. (Selection: AM/FM)

11.6.1.6 Cooling-system Adjustment

Adjust the frequency converter to the cooling system used in the machine.

Heat Transfer Plate

1. Use a spatula to remove old heat-transfer compound residue from the heat-transfer plates. Use solvent to remove any remaining traces of residue.
2. Check whether the transfer plates show any signs of damage. Carefully file off or grind off any local unevenness.
3. Brush in heat conducting paste uniformly, full surface on the transfer plate before installing the device. Use a small paint roller to do this.

Requirements for the Heat Conducting Paste

Composition	Silicone-free
Thermal conductivity	0.9 - 1.0 W/mK

11.6.1.7 Setting the T1000V Frequency Converter

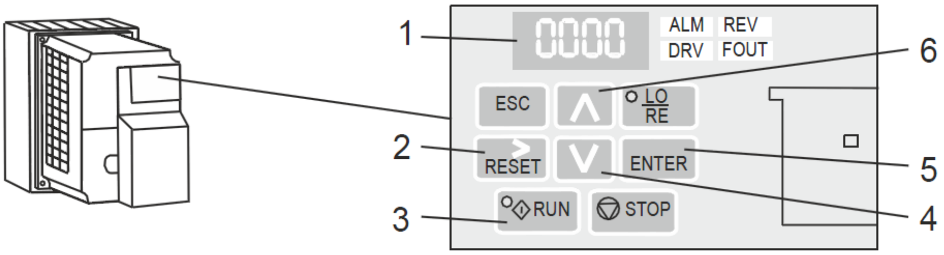

Figure 189: Setting the T1000V frequency converter

After replacement of a frequency converter, set the baud rate and node address.

Authorization Setup (for All Frequency Converters)

1. Energize the frequency converter to be adjusted. To do this switch ON the main switch.
2. Push the keys 4 or 6 until the display (Par) for the parameters 1 appears.
3. Confirm the selection using key 5.

   ⇨ The parameter (A1-01) flashes on the display 1.
4. Push the key 5 several times until the display changes to the parameter value.

5. With the 2 key move from one number to the next. With the keys 4 and 6 set the value (0002).
6. Confirm the selection using key 5. (END) is briefly illuminated, then the set value (002) and then (A1-01). The authorization to alter the parameter is present.

Initialization (for All Frequency Converters)

1. The authorization is present. (A1-02) flashes.
2. Use key 6 to increase the last digit on the display 1 to 3.
3. Confirm the selection using key 5.
4. Use keys 2, 4 and 6 to enter the value (2220).
5. Confirm the selection using key 5. When the initialization is completed (A1-03) appears again.

Set Communication Parameter to Do Not Initialize.

The authorization is present (A1-02) is flashing.

1. Use key 2 to move to the letter (A) on the display 1.
2. Use key 6 to change the letter (A) to the letter (F).
3. Use key 2 to select the parameter (F6-08).
4. Confirm the selection using key 5.
5. Use key 2 to select the last digit.
6. Use keys 4 and 6 to enter the value (00).
7. Confirm the selection using key 5.

Setting the Baud Rate

The authorization is present (A1-02) is flashing.

1. Use key 2 to move to the letter (A) on the display 1.
2. Use key 6 to change the letter (A) to the letter (F).
3. Use key 2 to select the parameter (F6-36).
4. Confirm the selection using key 5.
5. Use key 2 to select the last digit.
6. With the keys 4 and 6 set the value 4.
7. Confirm the selection using key 5.

Setting the Node Address (Dependent on Frequency Converter Selected)

The authorization is present (A1-02) is flashing.

1. Read off the node address of the relevant frequency converter from the electric circuit diagram.
2. Use key 2 to move to the letter (A) on the display 1.
3. Use key 6 to place the letter (A) on the letter (F).
4. Use key 2 to select the parameters (F6-35).
5. Confirm the selection using key 5.
6. Use key 2 to select the last digit.
7. Main switch ON/OFF.

11.7 Torque Standard

Screw dimension	Strength class	Torque	Clamping strength
M4 Coefficient of friction µG = 0.14	4.8 (Welding stud)	1.5 Nm	
	8.8	3.1 Nm	3.9 kN
	10.9	4.5 Nm	5.7 kN
	12.9	5.3 Nm	6.7 kN
M5	4.8 (Welding stud)	3.0 Nm	
	8.8	6.1 Nm	6.4 kN
	10.9	8.9 Nm	9.3 kN
	12.9	10.4 Nm	10.9 kN
M6	4.8 (Welding stud)	5.0 Nm	
	8.8	10.4 Nm	9.0 kN
	10.9	15.5 Nm	13.2 kN
	12.9	18.0 Nm	15.4 kN
M8	4.8 (Welding stud)	13.0 Nm	
	8.8	25.0 Nm	16.5 kN
	10.9	37.0 Nm	24.2 kN
	12.9	43.0 Nm	28.5 kN
M10	4.8 (Welding stud)	25.0 Nm	
	8.8	51.0 Nm	26.0 kN
	10.9	75.0 Nm	38.5 kN

Screw dimension	Strength class	Torque	Clamping strength
	12.9	87.0 Nm	45.0 kN
M12	8.8	87.0 Nm	38.5 kN
	10.9	130.0 Nm	56.0 kN
	12.9	150.0 Nm	66.0 kN
M16	8.8	215.0 Nm	72.0 kN
	10.9	310.0 Nm	106.0 kN
	12.9	370.0 Nm	124.0 kN
M20	8.8	430.0 Nm	117.0 kN
	10.9	620.0 Nm	166.0 kN
	12.9	720.0 Nm	194.0 kN
M24	8.8	740.0 Nm	168.0 kN
	10.9	1080.0 Nm	239.0 kN
	12.9	1240.0 Nm	280.0 kN

Table 1: Torque Standard

12 Decommissioning and Storage

This chapter contains the information about the decommissioning, the storage of the machine and the correct preventive maintenance.

12.1 Decommissioning

- Put the machine into a safe state.
- Disconnect the power supply.
- Protect the machine from misuse.
- Secure the machine in such a way that when it is idle there is no risk of injury to any person.
- The machine-specific regulations with regard to decommissioning must be observed.
- The machine must be suitably protected against soiling and corrosion.

The regulations and operating procedures specific to the machine are listed in the respective topic. These regulations, and particularly the safety regulations, must be adhered to most exactly.

12.2 Storage

The steps to keep the machine safe are as follows:

- To prevent from contamination or corrosion, keep the machine in a clean and dry room.
- Make sure that no unauthorized operation occurs at the machine.
- Make sure that the machine has no risks of injury to personnel.

12.3 Disassembling the Machine

Make sure that the instructions that follow are obeyed:

- The machine is disassembled and packed by the specialists.
- The machine is disassembled into units that stay in a safe status during the transport.
- Dangerous machine parts that have risks during the transport are disassembled and safely packed.

12.4 About the Operating Fluids

All operating fluids are to be removed from the machine. The local laws and regulations are to be obeyed for the storage or the disposal of all operating fluids.

12.5 Cleaning the Machine

Make sure that the machine is cleaned before the decommissioning. For more information about how to clean the machine, please refer to chapter **Maintenance** of this manual.

12.6 Decommissioning

1. Put the machine into a safe state.
2. Disconnect the power supply.
3. Protect the machine from misuse.
4. Secure the machine in such a way that when it is idle there is no risk of injury to any person.
5. The machine-specific regulations with regard to decommissioning must be observed.
6. The machine must be suitably protected against soiling and corrosion.
7. The regulations and operating procedures specific to the machine are listed in the Chapter "Taking out of service" in Part 3. These regulations, and particularly the safety regulations, must be adhered to most exactly.

12.7 Machine Set up; Optimise Settings

12.7.1 Take the Machine out of Service

12.7.1.1 Take the Machine out of Service

1. Disconnect the power supply.
2. Secure the machine.
3. Protect the machine from contamination and corrosion.

13 Disposal of the Machine

This chapter contains the information about the disposal of the machine after the service life end of the machine. When the machine becomes discarded, the applicable national and regional laws and directives are to be obeyed.

13.1 Disposal

After the decommissioning of the machine, the local environmental laws and specifications to discard the machine equipment are to be obeyed.

The disposal includes:

- Reusability
- Recycling
- Waste disposal

The operating materials of the machine such as oil or batteries must be correctly disposed.

13.2 Materials

The user must divide materials in relation to the material group and give the machine parts to the correct collection point:

- Steel
- Copper
- Brass
- Rubber
- Electronic waste
- Cast iron
- Glass
- Plastics
- Liquid materials
- Hazardous waste

13.3 Owner or Operator Responsibility

The machine owner or the operator is responsible for the disposal of the machine.

For the disposal of the assemblies that were not made by Rieter, the related instructions that are given in the supplier documentation are to be obeyed.

13.4 Safety Regulations

⚠ **WARNING**

Falling machine components!

Dangerous injuries by crushing of body parts

- ▶ Do NOT lift heavy components manually.
- ▶ Always use a safe and applicable lifting device.

13.5 Discarding the Machine

When the machine becomes discarded, the applicable national and regional laws and directives are to be obeyed.

13.6 Notice to the Manufacturer and the Authorities

Before the machine becomes discarded, the user must tell the related disposal authorities and the government agencies.

Tell the machine manufacturer – Rieter – about the disposal of the machine.

E-mail: info@rieter.com

13.7 Disposal

Disposal

In the case of the machine being conclusively removed from operation, the legal regulations of the relevant country should be observed.

This applies in particular to:

- Re-usability
- Recycling
- Waste disposal

It must be ensured that the fuel remaining in the machine is disposed of in accordance with regulations.

Fuel such as oils, grease and batteries.

The regulations and operating procedures specific to the machine are listed in the Chapter "Disposal" in Part 3. These regulations, and particularly the safety regulations, must be adhered to most exactly.

13.8 Disposal of Machine

13.8.1 Accident Prevention

1. Comply with the instructions for occupational health and safety.

13.8.2 Operating Materials

1. Drain the oils and coolants.
2. Properly dispose of the operating materials.

13.8.3 Removal

– The tasks must only be carried out by trained specialists.

Prepare the machine for transport.

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RIETER

Rieter Machine Works Ltd.
Klosterstrasse 20
CH-8406 Winterthur
T +41 52 208 7171
F +41 52 208 8320
machines@rieter.com
aftersales@rieter.com

www.rieter.com

Rieter India Private Ltd.
Gat No. 768/2, Village Wing
Shindewadi-Bhor Road
Taluka Khandala, District Satara
IN-Maharashtra 412 801
T +91 2169 304 141
F +91 2169 304 226

Rieter (China)
Textile Instruments Co., Ltd.
Shanghai Branch
Unit B-1, 6F, Building A,
Synnex International Park
1068 West Tianshan Road
CN-Shanghai 200335
T +86 21 6037 3333
F +86 21 6037 3399

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